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ABSTRACT

A competency-based education program was implemented in the Las Cruces, New Mexico public schools, with emphasis on teacher training and field testing of various competency-based models. Program impact was determined according to changes in teaching techniques, student achievement, and student social behavior in both experimental and control schools. Pre- and post-test attitude questionnaires were administered to both teachers and students. Students were tested in ten areas of language and mathematics achievement, using the California Test of Basic Skills. The results indicated the program was effective in changing the behavior of teachers toward a more cooperative and student-oriented (individualized) style. The affective behavior of the students was also changed as a result of the program; there were more achievement-oriented and fewer ambivalent students at the end of the program. No significant differences were found in student achievement between program participants and controls. This may be explained by premature timing of the achievement test administration. Appendices include brief descriptions of the School Image Description Questionnaire and the Instrument for the Observation of Teaching Activities; the Student Behavior Description Questionnaire; and the Philosophy of Teaching Form. (Author/GDC)

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Competency Based Education and Teacher and Student Performance: The Impact of the Las Cruces Public School Model

Don B. Croft

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INTRODUCTION

Many authors have described procedures for evaluating the impact of innovative educational programs. Chief among these include the models of Stanley and Campbell,[1] Scriven,[2] Stufflebeam,[3] and Stake.[4] Scriven maintains that a complete evaluation includes both measurement of goal achievement and a judgement of the merits of the goals themselves. Stake contends that evaluation consists of both description and judgement and that either description or judgement alone is not evaluation. Cambell and Stanley indicate that many quasi-experimental designs are "well worth implementing" should true experiments be impossible. Moreover, Stufflebeam outlines a procedure for evaluating programs and stresses the importance of the context in which the program was conducted. Finally, Miles describes the process as well as the problems associated with implementing new programs in schools.[5]

Problem

At this juncture, there is no single model which has provided the basis for valid evaluative data for input to the decision-making process. Accordingly, this study draws upon the work of various authors as well as taking into account some pitfalls of evaluation offered by Alkin.[6] Thus, the input to the decision-making process as a result of the evaluation procedures for the Las Cruces Public School Competency Based Education program (LCPS CBE) includes, as reported by Stake, both description and evaluation. The description includes data from newly developed measuring instruments as well as nationally standardized achievement tests. The judgements were recorded from conversations with teachers, students, and administrators as

well as the observations of CBE staff members participating in the project. Baxter, in Evaluative Research describes the importance of narrative data in educational evaluation.[7] Thus, the data comprising this report reflect a variety of sources which, for the most part, can be classified as "hard data" and observational data.

Purpose

The purpose of this report is to describe the impact of the Las Cruces Public Schools Competency Based Education program upon the teaching techniques of teachers, and the achievement and affective behavior of students. The report also includes a synthesis of observations and comments made by CBE program participants and CBE staff members. In addition, inferences from the data provide a basis for making recommendations relative to the Competency Based Education program.

Objectives

A study of the impact of an educational program is comprised of an examination of the factors which were selected as the ones which had the highest probability of changing as a result of the program. Accordingly, a description of program impact includes the following objectives:

1. Provide an overview of the sequence and process of program implementation.

2. Identify changes in teacher attitudes and teaching techniques.

3. Describes changes in student achievement as measured by a nationally standardized achievement test.

4. Report changes in student behaviors and attitudes as measured by a self-report questionnaire.

5. Provide a summary of the observations of CBE program staff and the comments of teachers and administrators participating in the CBE program.

Preview

The Project was established as an educational program to create awareness of competency based education as well as to teach instructional skills, and stimulate self-directed study for improving teacher instruction in the LCPS. The program was designed to offer teacher training workshops to provide knowledge about teaching techniques described as those associated with effective student learning. Supplemental individualized instruction was given to teachers by an implementation committee of teachers in each experimental school, teacher training consultants, resource teachers in the LCPS, and from teachers participating in an in-depth study of competency based education.

The design of the evaluation included pre and post administrations of measuring instruments to students and teachers. One instrument measured student achievement and an other self-report inventory measured student attitudes towards school, teachers, peers and parents. In addition, teachers completed an instrument which allowed them to describe the teaching techniques they used in class. Approximately 2,500 students, and 350 teachers in eight different schools participated in the study. The sample of schools included four in the experimental group and four in the control group.

The findings of the evaluation indicate that the CBE program was effective in changing the instructional behavior and attitudes of teachers and the achievement behavior and attitudes of the students, but the impact upon student achievement was inconclusive. Specifically, teachers in the experimental schools employed a cooperative style and individualized approach to teaching and identified more with teaching at the end of the program. Significantly more achievement oriented students existed in the experimental schools at the end of the program, and these students expressed more interest in

school than the ones in the control schools. Achievement on a nationally standardized test was the same for students in the experimental and control schools. A model describing the major operational components of the CBE program was reported, and guidelines for implementing an instrument for assessing teaching behavior was also developed.

PROGRAM IMPLEMENTATION MODEL

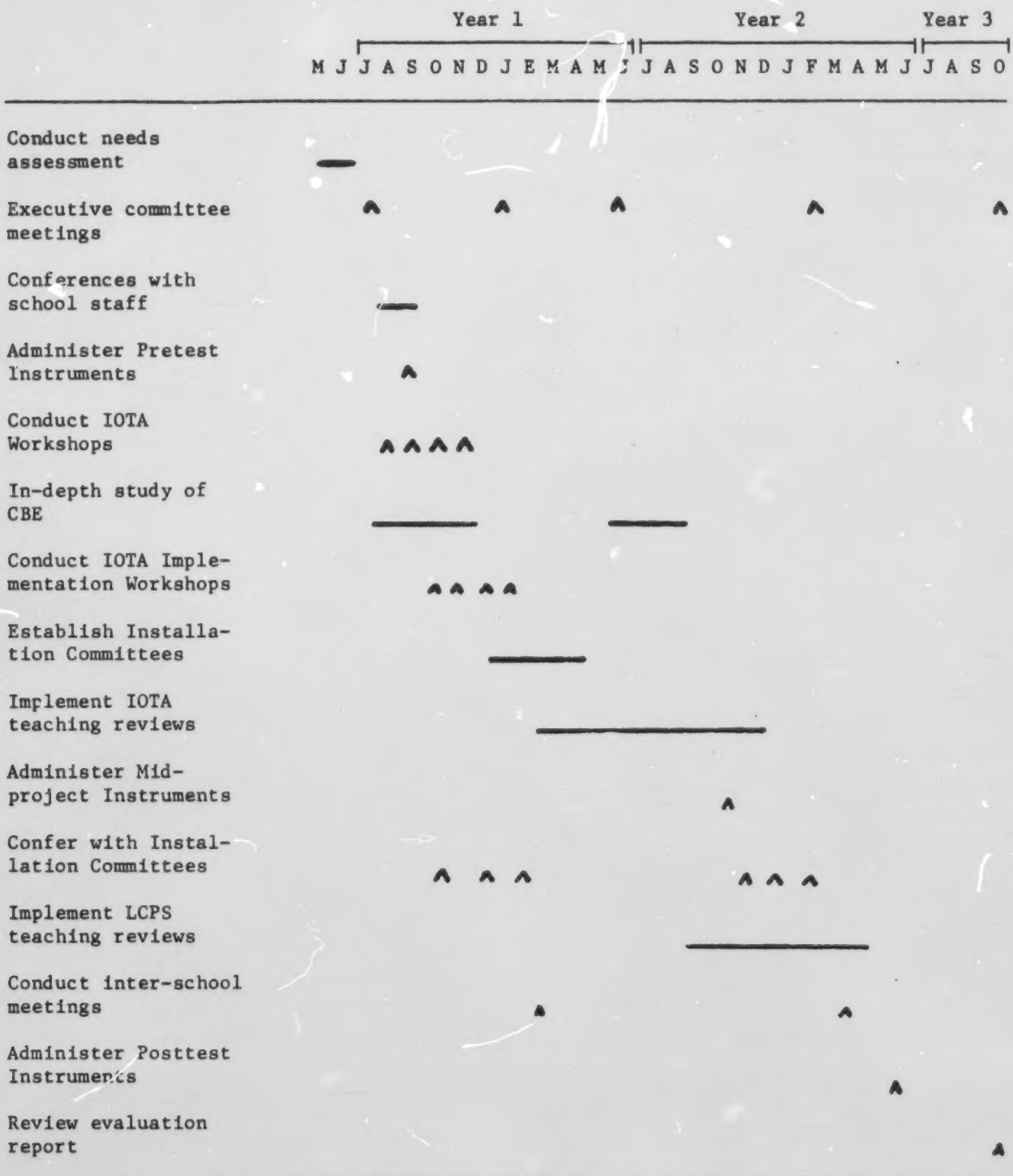
Implementing a program in an operating school system is complex and requires planning and coordination among directors and participants. Communication to inform school staff about the nature of the program, as well as the goals and specific materials to be used is essential and has direct implications for the success of the program. The sequence of the process is described by several authors, for example: Cook describes how PERT can be used to assist the implementation of a new program.[8] Nelson and Parker offer a model describing specific operations for designing, developing and establishing new educational programs in the Diffusion of Innovations.[10] Thus, several authors provide general models for program implementation, but it is often necessary to tailor general models, to the needs of a specific school district.

Presented in Table 1 is an overview of the sequence of component activities that were conducted to implement the LCPS Competency Based Education program. The following section describes each component in detail.

Needs Assessment. Prior to implementing the CBE program a needs assessment of Las Cruces Public Schools had been conducted. Thus, information on the two high schools, one junior high and an elementary school was available. The needs assessment was performed by administering the School Image Description Questionnaire (SIDQ). A description of the SIDQ is included in Appendix

Table 1

CBE Program Implementation
and Evaluation Plan



A. The SIDQ is administered to parents, teachers, administrators and students, and a Spanish version is available for Spanish speaking parents.

The instrument obtains ratings which provide a ranking of the goals for the school. It also allows the groups to describe the operations of the school, for example: student academic behavior, interest in school, peer relations, teaching style, parent participation etc. In addition, the teachers and principal indicate their interest in each of 25 different innovative educational programs.

An analysis of the results of the needs assessment indicated all groups placed the goal for the school, Career preparation for students, high on the priority list. Moreover, teachers indicated that they wanted more information on new curricular materials, and teaching methods. Thus, the teachers appeared to be receptive to a program for improving instruction. The needs assessment, although not conducted directly for the CBE program, indicated that a "need" existed for improving instruction.

Executive Committee. The superintendent of schools selected a CBE executive committee comprised of representatives from the central school office, the University, local school staff, and representatives of professional education organizations. The executive committee held meetings to discuss selected attributes of the program, and specific procedures for implementing the program. The executive committee, as a whole, indicated that the project would be perceived as a threat to teachers if a CBE certification approach were taken. Thus, the committee recommended that the project take an incremental approach to competency based education to ensure teacher cooperation and participation in the program. Providing a knowledge base about competency based education before any move to competency based certification was

the first step. On the other hand, the products of the project, teacher generated teaching competencies, would have implications if the policy were established to implement competency based certification.

Conferences with School Staff. Meetings were held with the faculty and administrators of the schools participating in the CBE program. The CBE program was presented at the meetings. The CBE program directors and evaluators discussed the program with school staff members, and answered questions from the faculty members. The meetings with personnel in the school were an important component of the program, and provided a knowledge base for the school staff about the CBE program. The meetings lasted approximately two hours long, and a second meeting was held in two of the schools.

Administer Pretest Instruments. At the beginning of the project, baseline data relative to student achievement and behavior as well as the teaching techniques employed by teachers was collected. The CTBS, and SBDQ were administered to the students, and the PTI was administered to the teachers in the control and experimental schools. The instruments provided a description of current performance levels for the teachers and student. Thus, comparisons of the posttest could be made with the baseline data after the program was in operation for the two year period. The change after taking into account specific controls was attributed to the impact of the CBE program.

IOTA Workshops. Following the conferences with teachers and administrators to inform them about the competency based education program, five-day workshops were conducted in each of the experimental schools. The workshops were planned to achieve several objectives. First, the workshop provided a basic orientation for the teachers and administrators to the role of teachers in the school as well as the community. Second, the workshop was

planned to introduce specific teaching techniques that prior research had identified as contributing to student achievement. Some of the techniques are commonly used in the classroom by teachers in the LCPS while other instructional methods were new to some of the teachers. Finally, the workshops were intended to familiarize the teachers with the concept of self-appraisal of teaching based upon the results of a team of peers observing the teachers classroom instruction and the results of a structured interview with the principal about the multi-faceted role of the teacher. Thus, the assessment of teaching was based upon systematic observation of the teachers instruction as well as interview results about the teaching role. The data provided the teacher with an objective basis for self-appraisal, as well as information which could be used for instructional improvement.

The workshops, then, were an orientation to the concept of effective instruction in which familiar as well as new teaching techniques were described. In addition, procedures for implementing the teaching performance review were described, and how these procedures could be employed to improve teacher instruction. A brief description of IOTA is presented in Appendix B.

In-Depth Study of Competency Based Education. Many different school systems have developed different models of competency based education. The CBE models have unique as well as common attributes when examined in detail. The purpose of the in-depth study classes was to examine each of the CBE models, and identify attributes of the system which could be adapted to the Las Cruces Public Schools. Thus, the goal of the in-depth study group was to study existing models for competency based education. Then, through the process of critical evaluation arrive at a consensus, and prepare a report describing a CBE model which could be field tested in the LCPS. In other words, the terminal goal of the in-depth study committee was to create a new

Competency Based Education model which could be field tested and evaluated in the Las Cruces Public Schools.

Establish Self-Assessment Installation Committees. Another important aspect of the CBE program was the establishment of the self-assessment installation committees in each of the experimental schools. The committees comprised of teachers and the principal in each school were the instrumentality for implementing the CBE program. The committee carried out the procedures for conducting the CBE program in each school. Specifically, members of the committee participated in the teams observing and rating the classroom instruction of other teachers in the school, conducted the interviews with the teachers about the teachers professional role, and identified resource people for the teacher to obtain assistance for improving classroom instruction.

The installation committees, in addition to the role they played in implementing the procedures presented by the CBE program staff, also initiated discussion and instruction on their own about competency based education. In other words, they obtained further information about CBE, discussed the models among themselves, and in general obtained a broad base of knowledge about CBE as well as procedures for improving classroom instruction. Periodically, outside consultants with expertise in CBE consulted with the installation committees to provide additional substantive input as well as reactions toward the activities carried out by the installation committees.

Conduct IOTA Implementation Workshops. The initial IOTA workshops were conducted to inform teachers about appraising instructional techniques as well as the attributes of the IOTA system. The objective of the implementation workshop, on the other hand, was to discuss how the procedures are put

into operation in the school. Thus, the original IOTA workshop was directed towards teaching the substance of instructional improvement, whereas the implementation workshop had a procedural or process emphasis. The installation committees learned how to implement the IOTA procedures.

During the first year of the CBE program, the experimental schools used the IOTA instruments for observing teaching behavior and for interviewing the teachers. However, for the second year, the instruments developed by the in-depth study committee instead were used with the teachers in the experimental schools. Although the instruments are different, the knowledge base obtained by the installation committee during the first year by using the IOTA instruments was a preparation for field testing the LCPS CBE model.

Implement IOTA Teaching Review. After the self-assessment installation committees had been established, and members of the committee had been prepared by both IOTA workshops, the implementation committee began conducting the teaching performance reviews with the remaining teachers in each of the experimental schools. The reviews were conveniently scheduled with the teachers and the principal.

Administer Mid-Project Evaluation Instruments. Near the end of the first year of the CBE program, the instruments for evaluating the program again were administered to the students and teachers in both the experimental and control schools. The SBDQ and PTI were administered to all schools at this time. The CTBS was administered by the LCPS according to their regular schedule of achievement testing. Accordingly, the schedule did not permit testing some of the schools at this time. However, all schools received a pre and post test near the beginning and near the end of the project, but according to the schedule set by the district.

Consultation with Installation Committees. Throughout the project, outside consultants, project staff, and LCPS Central Office personnel met

with members of the installation committees. The purpose of the meetings were to discuss topics that arose during the implementation of the program, provide new information relative to CBE, and simply to be available for consultation.

Implementation committee members made recommendations for improving the CBE program which were based upon their experience in the schools. In addition, the committee members held meetings with members of the implementation committees in other experimental schools. The committee members in the different schools exchanged ideas and materials relative to CBE. Moreover, the meetings helped identify resource teachers on a district wide basis.

Implement LCPS Teaching Reviews. One goal of the in-depth study committee was to develop a CBE model and prepare guidelines for using the CBE program. At the end of the first year of the project, the LCPS CBE model had been developed and the guidelines published. Accordingly, the LCPS CBE model and instruments were used in the performance review during the second year of the program. The guidelines were distributed to the implementation committees, and the teacher review process based upon the LCPS model was implemented.

Initially, the teachers reported some adjustment in the process was necessary because they had become familiar with the IOTA teaching review procedure. However, the transition to the LCPS instrument was made rapidly and, in part, can be attributed to the base of knowledge that teachers had gained from the workshops, installation committee meetings, IOTA review process, and the information provided by the consultants. Reactions to the LCPS CBE instruments were obtained from the teachers. Thus, the main criticism was towards the scoring system for the instrument; teachers performing well received no marks on the instrument. The scoring system was subsequently changed to provide more feedback to the teachers.

Conduct Inter-School Installation Committee Meetings. Periodically throughout the second year of the project, installation committee members in one experimental school held meetings with the installation committee members of another school. The purpose of the meeting was to exchange and share information about the CBE activities of each group. Each committee had been established with guidelines that allowed the committee to operate autonomously. Therefore, the committees in each school had independently obtained information relative to CBE, and had established implementation procedures that were relatively unique for each school. Thus, the conferences allowed the committees in each school to obtain additional information about the CBE installation procedures. Moreover, the meetings provided a basis for teacher dialogue relative to the LCPS CBE instruments, as well as identifying resource teachers in other schools that had expertise in specific areas of teaching. Thus, resource teachers from one school could provide assistance to those in other schools.

Administer Posttest Evaluation Instruments. The instruments for assessing change in student achievement and attitudes (the CTBS and SBDQ) and teaching behaviors (TPI) were administered near the end of the year. Thus, the final posttest was available to assess the impact of the CBE program on students and teachers.

Review Evaluation Report. A meeting of the executive committee was held to review the findings of the evaluation of the CBE program and to make recommendations.

METHOD

The basic design for measuring the impact of the CBE program was to identify changes which occurred on measuring instruments administered prior to the initiation of the project and at the end of the project. Schools participating in the project were separated into experimental and control schools. The experimental schools received the program and completed the measuring instruments while the control schools completed only the instruments.

Measuring Instruments

The measuring instruments used in the study were administered to teachers and to students. The following describes the measuring instruments.

Comprehensive Tests of Basic Skills (CTBS). These tests were used to measure the academic achievement of students during the program. A description of the CTBS tests is presented in the Examiners Manual.[11] The CTBS are one of the most widely used achievement tests in the United States, and forms are available for grades K - 12. The items in the achievement tests measure knowledge in the subject matter areas of Reading, Language, Arithmetic, and Study Skills.

The CTBS were not intended to measure achievement in specific courses as reflected in textbooks for various grade levels. Instead, these tests aim to measure skills common to all curriculums irrespective of the method of teaching used. Thus, the CTBS was designed to measure achievement of students taught by a traditional approach or by any of the newer approaches.

Student Behavior Description Questionnaire (SBDQ). The SBDQ was used to measure changes in the affective behavior of students in the CBE program.

The SBDQ is comprised of ninety items which provide a measure of affective behaviors toward four sources of student social behavior: family, friends, teachers and attitudes toward school. Moreover, within each of the four domains, the SBDQ has three subscales to measure different aspects of interpersonal behavior towards friends, teachers and family as well as three different subscales to measure attitudes toward school. Thus, the SBDQ has a total of twelve subscales measuring affective behavior associated with school related social relations. A copy of the forms used for elementary, jr. high, and sr. high schools is included in Appendix C. The definitions for each of the twelve subscales grouped according to the four basic domains of affective behavior is presented in Plate I.

The SBDQ also identifies different "types" of students in a school. An examination of the profile of a students responses across the twelve subscales, yields patterns which identify eight prototypic student types. In other words, the SBDQ can be used to identify the number of different types of students that are enrolled in a school. An analysis of the frequency of different types of students existing in a school is particularly important when examining the impact of an educational program. By an analysis of the change in the number of different types of students obtained from the pretest when compared to the posttest, it can be noted that the posttest results show a significant decrease, for example, in the number of ambivalent students and a significant increase in the number of achievement oriented students. Definitions for the eight basic types of student profiles obtained with the SBDQ is presented in Plate II.

The SBDQ was developed through factor analytic statistical techniques, and has an average internal consistency reliability of .76. The instrument was originally constructed with a multicultural sample and is considered a

PLATE I

STUDENT BEHAVIOR DESCRIPTION QUESTIONNAIRE
SUBTEST DESCRIPTIONS

FRIENDS

FRIENDSHIP refers to the student's ability to enjoy friendly relationships with other students, confide with and discuss problems with friends, and be at ease with other students. The student is able to obtain social satisfaction from other school friends.

UNACCEPTANCE refers to the satisfaction the student obtains from group identification, the ability to socialize in student group activities, and feelings of satisfaction from student-group membership. The dimension describes the behavior of most other students to include him as a group member.

ACADEMIC refers to the interest in academic achievement of the student's friends, and describes the ability of peers to study, obtain good grades, and enjoy academic activities. It indicates that his peers obtain satisfaction from school achievements.

FAMILY

INTIMACY refers to the student's enjoyment of friendly social relations with his parents, that he gets along well with his parents, and that he receives consideration and friendly help. The dimension describes the affection the student receives from parents.

INCLUSION refers to behavior by the parents to participate and be included in the school activity of the students. It describes that appropriate help and direction is given from the parents to aid the educational attainment of the student.

STRUCTURE refers to the emphasis parents place upon education, and desire for the student to achieve in school. It describes how parents stress school attendance, good grades, and insure the student does his homework.

PLATE I (continued)

STUDENT BEHAVIOR DESCRIPTION QUESTIONNAIRE
SUBTEST DESCRIPTIONS

TEACHERS

CONSIDERATION refers to behavior by teachers which is characterized as friendly and courteous to the students. The teacher is considerate of student feelings and is easy to get along with, pleasant, and cheerful to the students.

THRUST refers to the behavior of teachers to motivate, instruct, and obtain student participation in academic activity. It describes the ability of teachers to appropriately structure class activities, encourage students to express their opinions, and allow the student to discuss and clarify their thinking about the subject matter.

DOMINATION refers to teacher behavior that is authoritarian, critical, and impersonal. The dimension describes behavior to dominate, restrict, and allow little freedom for students to discuss class material.

SCHOOL

PARTICIPATION refers to the students' participation in school extracurricular activities, and that he helps plan school activities, join service clubs, is a member of activity committees, and enjoys the student-group events.

DISINTEREST refers to the students' interest and desire to continue school. It describes the ability of the student to stay out of trouble, accept school regulations, desire good grades, and obtain credit for his ability to perform in school.

INDEPENDENCE refers to the students' attitude that he is independent, capable of making his own decisions, and knows what he wants from life. It also indicates that the student is employed, has enough money for school activities, and has a high interest in vocational activity.

PLATE II

Hypothetical Types of Students

A statistical analysis of the SBDQ profile scores was conducted to identify general patterns of scores. The analysis yielded eight relatively independent patterns of scores across the subscales. The patterns of scores were interpreted in relationship to the concepts measured by the SBDQ subscales, and eight hypothetical student types were identified. The following descriptions refer to each of the hypothetical types of students identified by the prototypic profiles.

1. Social Leaders refers to students who participate in many extra-curricular activities, are very interested in school, and frequently act in an independent manner. In addition, they are accepted by others, have many friends and have only average interest in academic activities. The students engage in a model amount of Intimacy, Inclusion, and Academic behaviors with their parents. Students in this group frequently engage in social activities, and friendship relationships with peers.

2. Achievers with friends refers to a student who participates frequently in academic activities, and engages in friendly relationships with only a few other students. The students are independent, engage infrequently in extra-curricular activities and obtain little acceptance from most other students. Parents of the students infrequently attend school events or help them with homework. Parents and the student, however, have average Intimacy and the parents do not overstress the need for academic achievement to the students.

3. Unaccepted participators are characterized by very frequent participation in extra-curricular activities. Their parents often attend school activities with the student, but low Intimacy exists between the parents and the student. These students have an average number of friendly and academic relations with other students, but obtain infrequent acceptance from their peers.

4. Achievers with few friends engage primarily in academic activities with other academically oriented students and obtain little satisfaction from friendly relations with peers. The student infrequently participates in extra-curricular activities and expresses disinterest in school. The student receives need satisfaction in the areas of friendship and inclusion from parents, and parents place little emphasis upon academic achievement.

5. Dependent socializers are characterized by frequent friendly relations with other students. The students are dependent, and in general are infrequently accepted by other students. The student expresses average interest in school, but does not participate in extra-curricular activities. There is little emphasis for academic achievement from parents as well as low affiliation between the student and parents. The parents, however, do attend functions sponsored by the school.

6. Ambivalents are characterized as moderately interested in school, but have few infrequent friendship relationships and seldom engage in academic or extra-curricular activities. In addition, their parents seldom engage in social behaviors with them which fulfill needs for Inclusion, Affiliation or Achievement. In brief, ambivalent students have infrequent occurrences of behaviors to satisfy their interpersonal needs.

7. Accepted socializers participate frequently in social relations with their friends. Students infrequently engage in academic activities, and have high independence and autonomy. These students express disinterest in school, and rarely participate in extra-curricular activities. The students receive an average amount of academic structure and intimacy from parents. In short, the students are not interested in school activities or achievement, but do have many friends and obtain satisfaction from socializing with their friends.

8. Non participators are characterized by very frequent parental emphasis upon gaining an education. The parents participate in school sponsored activities, and receive satisfaction from friendly relations with the students. The students are interested in school, but do not participate in extra-curricular or academic activities with peers. The students receive some satisfaction from friendly relations with peers, and obtain average acceptance from other students. The student expresses average interest in school, but participates little in academic or extra-curricular activities.

culture free instrument. The norms based upon a standardization sample obtained from seven different regions of the United States includes more than 15,000 students in elementary and secondary schools. A detailed description of the SBDQ is published in the Educational Organization Development Handbook.[12]

Philosophy of Teaching Inventory (PTI). The PTI was developed in 1971 to measure the teaching techniques used by student teachers at New Mexico State University. At that time no adequate instrument was available which was based upon theory or had been developed with rigorous statistical techniques. Accordingly, the PTI was constructed with the teaching theory of Adler as an impetus, and the technique of factor analysis or the statistical method for constructing an instrument with high internal consistency. A detailed description of the development of the PTI is reported by Croft.[13]

Subsequent research has been conducted to validate the PTI. Wright[14] found that PTI differentiated between elementary and secondary teaching styles, Bridgewater found significant correlations between PTI subscale scores and the ratings teachers received when student-teaching in public schools.[15] Lark found significant difference between teaching techniques employed by public school teachers and teachers conducting Extension Division classes.[16] The PTI is a relatively new instrument, and has been used only in different regions of the state. However, there appeared to exist sufficient validation data to warrant its use in the CBE study. Moreover, the instrument measured the type of teaching techniques expected to be learned by teachers in the CBE program. Currently, the norms for the PTI are based upon 1,200 teachers from Las Cruces, Carlsbad, and Alamogordo. The average reliability of the PTI subscales is approximately .60 the definitions for the three subscales measured by the PTI are presented in Plate III, and a copy of the inventory is included in Appendix D.

PLATE III

Philosophy of Teaching Inventory
Definitions for Subscales

Professional Identification refers to teachers pride and satisfaction from being a member of the teaching profession. It also describes a dedication to teaching and commitment to the normative values of teaching. Items describing the subscale include, for example: "I am proud of being a teacher", "teachers should be a model", "teaching is satisfying", and "encourage students to discover ideas". In short, the subscale describes teachers identification with the teaching profession.

Operative style refers to a style in which the teacher primarily initiates and directs the learning of subject matter by students. Teachers rely heavily upon organized lecture presentations in which the teachers role is a disseminator of knowledge and factual information. Items describing the subscale include, for example: "material should be taught in sequence", "teachers should set standards", "students shouldn't question teacher authority", and "behavioral objectives should be developed for each class". Thus, the teacher is the primary organizer and initiator in the learning situation

Cooperative style refers to a teaching style in which the teacher acts as the team leader for students in a learning situation. It is an individualized approach to teaching where many learning activities are initiated by students. Teachers have the ability to establish close interpersonal relationships with students, and at the same time act as an advisor and guide for classroom learning. Items describing the subscale include, for example: "students assist the teacher in planning lessons", "students are encouraged to work together", "students set their own pace", "the teacher acts as an advisor" and "most learning should be student initiated". In brief, teachers and students cooperatively work together in guiding and initiating learning activities.

Comparability of Experimental and Control Schools

Comparisons were made between the biographical characteristics of teachers and students in the experimental schools with those in the comparison schools. It can be recalled that schools in the experimental groups were matched on a judgemental basis with specific schools in the comparison group to control for characteristics which were associated with student achievement and teacher performance. The objective was to identify a comparison school with characteristics as similar as possible to the characteristics of the experimental schools.

The data in Table 2 describing the biographical characteristics of the students and teachers in a particular experimental school and those in the comparison school indicate that the schools were very similar. Note, in Table 1 that age, sex, education, and years experience teaching were comparable for the teachers in each experimental school and the appropriate comparison school. An exception, however, did occur for the teachers in VV elementary school. Although the difference was statistically significant, it is doubtful the age difference had any effect upon teaching in the school.

A frequency count of the number of students and teachers from different ethnic heritages is presented in Table 2. The proportion of persons with differing ethnic backgrounds in all the schools is very similar when the experimental school is compared with the appropriate comparison school. The only exceptions that occurred were in the cases of UH elementary school; a higher number of Anglo-American students were enrolled than in the comparison school, and for VV elementary school; a higher number of Spanish speaking students were enrolled than in the comparison school. Despite these two exceptions, all schools in the sample were comparable with respect to the ethnic heritage of teachers and students.

Table 2

Biographical Characteristics of
Students and Teachers in the
Experimental and Comparison Schools

	E1	C1	E2	C2	E3	C3	E4	C4
Biograph. Charact.	M	LC	C	Z	UH	LH	VV	MP
				Teachers				
Sex	1.52	1.40	1.49	1.55	1.78	2.00	1.89	1.91
Age	3.23	3.13	3.37	3.19	3.43	3.65	4.00*	3.41
Educ.	5.40	5.43	5.45	5.31	5.43	5.35	5.26	5.30
Yrs. exp.	3.81	3.97	4.02	3.52	4.09	4.12	3.90	3.91
				Students				
Sex	1.52	1.54	1.52	1.48	1.48	1.66	1.49	1.48
Age	5.24	5.17	2.21	2.25	2.97	3.14	3.20	3.10
Income	4.73	4.92	4.50	4.69	2.06	2.15	1.96	1.75

*significant at the .05 level

Table 3
Ethnicity of Teachers and
Students in Experimental
and Control Schools

Teachers

	E	C	E	C	E	C	E	C
	M	LC	C	Z	UH	LH	VV	MP
Anglo	21	25	27	23	20	15	17	15
Spanish	5	2	6	7	1	2	2	4
Black								
Native	1	2						1
Oriental								
Other	1	1	3	1	2	1		1
No Response	4		7			1		2
Total	32	30	43	31	23	19	19	23

N=220

Students

	E	C	E	C	E	C	E	C
	M	LC	C	Z	UH	LH	VV	MP
Anglo	195	193	75	115	75	42	12	59
Spanish	198	280	147	165	15	44	40	48
Black	7	3	3	4	0	3	1	1
Native	22	13	9	5	0	1	4	6
Oriental	3	7	2	4	1	6	0	4
Other	55	42	16	20	3	6	2	6
No Response	19	9	27	10	1	9	0	2
Total	499	547	279	323	95	111	59	126

N=2039

In short, Tables 2 and 3 indicate that the biographical characteristics of the students and teachers in the experimental schools were very similar to the characteristics of the students and teachers in the control schools. Thus, differences due to the experimental treatment are in all probability not due to the differences between the characteristics of the teachers and students in the experimental and control schools.

Table 4

Comparison of PTI subscale change scores for Experimental and Control Schools

	E	C	E	C	E	C	E	C	Overall		
	M	LC	C	Z	UH	LH	VV	MP	E	C	
Pretest											
I.D.	46	47	46	44	51	51	47	49	47.5	47.8	
Coop.	43	45	43	40	47	47	46	45	44.8	44.3	
Oper.	53	53	51	53	54	55	52	53	52.5	53.5	
Postest											
I.D.	41	47	45	46	52	54	51	44	47.3	47.8	
Coop.	38	41	39	39	45	44	48	36	42.5	40.0	
Oper.	50	53	55	55	53	59	56	54	53.5	55.2	
Difference											
I.D.	-5	0	-1	+2	+1	+3	+4	-5	-.2	0	-.2
Coop.	-5	-4	-4	-1	-2	-3	+2	-9	-2.3	-4.3	+2*
Oper.	-3	0	+4	+2	-1	+4	+4	+1	+1.0	+1.7	-.7

RESULTS

Change in Teaching Techniques of Teachers

It can be recalled that the major thrust of the program was to improve the abilities of the teachers to instruct. The training was designed to teach competencies associated with effective teaching. The PTI was employed on a pre-post basis for teachers to report the specific teaching techniques that they employed in classroom instruction, and to identify the change in techniques the teachers used after participating in the program.

The comparison of the PTI subscale scores for each school in the sample as well as the total change for all schools is presented in Table 1. The subscale scores are based on distribution with a mean of 50 and a standard deviation of 10. Thus, scores about 50 are at the mean of the standardization sample. Thus, the scores are an index of how often the specific type of teaching techniques are employed by the teachers.

Note in Table 4 that a significant change occurred in Cooperative style teaching behaviors for the total sample, despite large differences among individual schools. The Cooperative style of teaching relies heavily upon a broad base of teaching techniques which build upon needs initiated by the students as opposed to the Operative style of teaching which relies heavily upon the lecture approach and stress upon discipline and control of the class. Also note that for the total sample no significant changes occurred in Identification with teaching or in Operative style of teaching.

It is important to observe the absolute value of the mean scores in the table. The Cooperative style scores were 42.5 and 40.0 respectively for the E and C groups. The posttest scores for the sample are approximately one S.D. below the standardization sample. On the other hand the mean scores

Table 5

Mean Philosophy of Teaching Subscale Scores
for all Experimental and Control Schools

Elementary							
	Experimental			Control			
	Pre	Post	Diff.	Pre	Post	Diff.	Overall Diff.
Ident.	49.0	51.5	+1.5	50.0	49.0	-1.0	+2.5*
Cooper.	46.5	46.5	0.0	46.0	40.0	-6.0	+6.0*
Oper.	53.0	54.5	+1.5	54.0	56.5	+2.5	-1.0

Secondary							
	Experimental			Control			
	Pre	Post	Diff.	Pre	Post	Diff.	Overall Diff.
Ident.	46.0	43.0	-3.0	45.5	46.5	+1.0	-4.0*
Cooper.	43.0	38.5	-4.5	42.5	40.0	-2.5	-2.0
Oper.	52.0	52.5	+0.5	53.0	54.0	+1.0	-0.5

for Operative style of teaching was 53.5 and 55.5 respectively for the E and C groups. In other words, teachers in the Las Cruces school district employ an Operative style of teaching and seldom rely upon Cooperative style techniques. Thus, it appears the Competency Based program influenced the teachers to develop their Cooperative style teaching techniques. Which includes a broader variety of teaching competencies to meet the needs of individual students.

The PTI subscale scores also were separated by elementary and secondary schools, and the scores are presented in Table 5. The table is helpful to identify where the changes in the total group occurred. Note, in Table 5 that the elementary teachers were the ones that reported significant increases in Cooperative style of teaching. In addition, the elementary teachers reported significantly more Identification with teaching as a result of the Competency Based program. Thus, for the elementary teachers the CBE program increased the frequency of Cooperative style teaching techniques and enhanced their identification with the teaching profession.

Conversely, the secondary teachers showed a significant decrease in Identification with teaching and no change in either the Cooperative or Operative styles of classroom teaching. Thus, the CBE program apparently had little impact upon the teaching behaviors of teachers in the two experimental secondary schools participating in the program.

In summary, the CBE program had a significant influence upon the teaching behaviors of the elementary teachers in the experimental schools. The teachers increased their frequency of teaching techniques which depend more upon teaching based upon student initiated learning activities, and to provide more individualized techniques. In addition, the elementary teachers had significantly higher Identification with teaching at the end of the program than at the beginning. On the other hand, no change occurred in the

teaching techniques of the secondary teachers, the teaching style remained primarily an Operative style, and there was a significant decrease in Identification with teaching for the secondary teachers.

Changes in Student Affective Behavior for the Total Sample

A second component of the evaluation of the impact of the Las Cruces Competency Based Education program was to identify the changes in student affective behavior. Accordingly, the SBDQ was administered on a pre post basis to the students in the E and C schools participating in the program. It can be recalled that the SBDQ measures four domains of student affective behavior: interpersonal relationships with teachers, peers, parents and school activities. Accordingly, the scores will be discussed separately for each domain. The mean SBDQ subscale scores for all Experimental and Control Schools are presented in Table 6.

Teachers. The total sample of students in the experimental schools reported that the teachers were significantly higher on Consideration after the program than before. Thus, the teachers behavior changed significantly with respect to their friendly relationships with the students. Moreover, there was a significant decrease in Domination behaviors on the part of the teachers at the end of the project. Thus, teachers were more considerate of the students and significantly less domineering.

Peers. The total sample of students also rated their behaviors with other students in the school. Students in the experimental schools reported a significant change in Unacceptance on the part of other students. In other words, there was less frequent social activities with other students. Apparently, more time in the classroom was spent on academic activities rather than the students spending their time in social relations. However, the students also reported a significant decrease in the Academic behaviors of peers.

Table 6

Mean SBDQ Subscale Scores for
all Experimental and Control Schools

	Experimental			Control			
	Pre	Post	Diff.	Pre	Post	Diff.	Overall Diff.
Cons.	50.6	48.1	-2.4	50.4	46.5	-3.9	+1.5*
Thrust	51.7	47.3	-4.4	51.1	46.6	-4.5	+0.1
Dom.	47.4	47.4	0.0	48.8	50.0	+1.2	-1.2*
Frnd.	50.5	52.3	+1.8	50.9	53.0	+2.1	-0.3
Unac.	47.3	47.9	+0.6	49.6	49.2	-0.4	+1.0*
Acad.	50.3	49.0	-0.7	50.5	51.0	+0.5	-1.2*
Int.	51.3	52.5	+1.2	51.0	52.7	+1.7	-0.5
Incl.	48.0	48.5	+0.5	47.5	48.9	+1.4	-0.9
Struct.	50.3	50.9	+0.6	51.5	52.2	+0.7	-0.1
Dis.	49.9	48.0	-1.9	49.2	49.3	+0.1	-2.0*
Part.	47.8	47.3	-0.5	48.3	48.2	-0.1	-0.4
Ind.	49.8	51.8	+2.0	50.8	52.9	+2.1	-0.1

Thus, the students friends appeared to be spending less time studying, doing homework and trying to obtain good grades. In short, significant changes occurred in the behaviors of students in the experimental schools; there were less social behaviors occurring among the students, and the students friends appeared to spend less time studying and doing other academic activities. This may in part be attributed to more learning occurring in the classroom.

Family. The students also described their social relations with other members of their family. The results in Table 6 indicate that no significant changes occurred during the program among the behaviors of students and their families. This is not unusual because the program included a parent component in only one elementary school.

School Activities. The students also indicated changes in their Interest in school, participation in Extra-curricular activities, and feeling of Independence. A significant change occurred only with respect to the Interest in school reported by the students: the total sample indicated that they were more interested in school at the end of the CBE program.

In summary, the results of the analysis of changes in students affective behavior indicated that teachers showed more Consideration and less Domination toward students. The students spend significantly less time in social relations as well as studying and doing homework, and finally all students reported significantly higher interest in school at the end of the program.

Comparison of Behavior Changes of Elementary and Secondary Students

The SBDQ results also were analyzed separately for elementary and secondary students. The results are presented in Tables 7, and 8, and indicate the differences in the impact of the program at the two levels.

Teachers. Both the elementary and secondary students reported that the teachers were higher on Consideration at the end of the project. Moreover the secondary teachers were significantly higher on Thrust; the ability of the teacher to structure class activities and encourage students to express their own opinions. The elementary students perceived the teachers as lower on Domination. Thus, the teachers were perceived as more considerate, and had more ability to motivate, instruct, and obtain student participation in classroom academic activities at the end of the CBE program than at the beginning.

Peers. The elementary students reported a significant decrease in Friendship relations in classes with other students, less social relations in class, and less academic behavior on the part of their friends. Apparently, the students spent more time in learning activities than participating in social relations in the elementary classroom. Secondary students, on the other hand, reported a significant increase in the number of friendship relations with other students, but less frequent social relations with other students in general.

Family. The elementary students reported significant decreases in Intimacy, Inclusion and Structure. Accordingly, parents were engaging less in affection relations with their children, helping them less with homework, and having to emphasize the need for study and education to their children. The parents of secondary students, however, engaged more frequently in friendly relations with their parents, as well as receiving more emphasis from their parents to do their homework and achieve in school.

Table 7

Mean SBDQ Subscale Scores for
Elementary Control and Experimental Schools

	Experimental			Control			
	Pre	Post	Diff.	Pre	Post	Diff.	Overall Diff.
Cons.	52.3	48.5	-3.8	54.0	48.7	-5.3	+1.5*
Thrust	52.9	47.6	-5.3	53.2	48.5	-4.7	-0.6
Dom.	47.0	47.2	+0.2	48.6	50.3	+1.7	-1.5*
Frnd.	49.0	50.5	+1.5	50.4	54.2	+3.8	-2.3*
Unac.	47.9	48.6	+0.7	51.8	50.6	-1.2	+1.9*
Acad.	50.9	47.7	-3.2	51.0	51.4	+0.4	-3.6*
Int.	52.0	52.4	+0.4	52.3	54.3	+2.0	-1.6*
Incl.	47.8	49.6	+1.8	47.3	51.5	+4.2	-2.4*
Struct.	49.2	50.4	+1.2	51.6	54.3	+2.7	-1.5*
Dis.	50.8	47.1	-3.7	49.5	49.3	-0.2	-3.5*
Part.	47.5	47.1	-0.4	49.8	49.4	-0.4	0.0
Ind.	49.2	51.0	+1.8	51.3	53.2	+1.9	-0.1

Table 8

Mean SBDQ Subscale Scores for
Secondary Control and Experimental Schools

	Experimental			Control			
	Pre	Post	Diff.	Pre	Post	Diff.	Overall Diff.
Cons.	48.8	47.7	-1.1	46.7	44.2	-2.5	+1.4*
Thrust	50.4	47.0	-3.0	49.0	44.7	-4.3	+1.3*
Dom.	47.7	47.6	-0.1	48.9	49.7	+0.8	-0.9
Frnd.	52.0	54.1	+2.1	51.4	51.9	+0.5	+1.6*
Unac.	46.8	47.2	+1.6	47.4	47.8	+0.4	+1.2*
Acad.	49.7	50.3	+0.6	49.9	50.5	+0.6	0.0
Int.	50.7	51.7	+1.0	51.3	51.0	-0.3	+1.3*
Incl.	48.2	47.4	-0.8	47.7	46.3	-1.4	-0.6
Struct.	51.3	51.4	+0.3	51.4	50.1	-1.3	+1.6*
Dis.	49.0	48.9	-0.1	48.9	49.4	+0.5	-0.6
Part.	48.0	47.5	-0.5	46.9	47.0	+0.1	-0.4
Ind.	50.4	52.6	+2.2	50.3	52.6	+2.3	-0.1

School Activities. The elementary students reported significantly more Interest in school at the end of the program. There were, however, no significant differences in school activities for the secondary students.

In summary, the CBE program appeared to effect the students in elementary schools differently than students in secondary schools. Specifically, parents helped elementary students less with their homework, while it appeared that parents of secondary students participated more with their children both in friendship and academic relations. Less social activities were occurring among the students, themselves, and both the elementary and secondary students reported the teachers were more considerate as well as able to structure class activities to motivate students, instruct them, and elicit classroom discussions.

Changes in Student Achievement

The CTBS was administered to the students to identify changes in achievement during the project. The results were analyzed for the E & C schools by each of the twelve separate subscales of the achievement tests. Mean subscale scores for the students are reported in Table 9.

In general, the results of the influence upon student achievement are inconclusive. In other words, the program had a differential effect upon the schools; some students gained above the expected amount for the time period and others achieved less than expected. Moreover, some experimental schools gained more than the comparison school while on the other hand some of the comparison schools gained more in achievement than the experimental school.

A variety of reasons can be offered to account for the differences, however, it appears that the program had not been in operation sufficiently long to determine if consistent gains in achievement were made by the

Table 9

CTBS Subscale Grade equivalent
change scores for 1.5 year period

	E	C	E	C	E	C	E	C
	M	LC	C	Z	UH	LH	VV	MP
Voc.	.85	1.68*	1.23	1.23	2.39	1.94	1.48	2.12*
Comp.	.70	2.05*	1.98*	1.36	2.70*	1.85	1.19	2.08*
Tot.	.72	1.80*	1.57	1.35	2.65*	1.88	1.44	2.18*
Mech.	.66	1.26*	2.22*	1.69	3.34*	2.64	1.37	2.28*
Express.	.15	1.64*	2.74*	1.21	2.77*	1.71	1.89	2.08
Spell.	.44	1.64*	1.53	1.44	2.27	2.65	1.63	1.74
Tot.	.63	1.51*	2.14*	1.51	2.94	2.92	1.73	2.12*
Compute	.72	1.28*	1.66	2.74*	2.99	2.76	2.26	2.52
Concepts	.68	1.08*	2.21*	1.49	1.93	2.57*	1.78	1.53
Applic.	1.44	1.74*	1.50	1.47	2.60	2.85	1.42	1.87
Tot.	.85	1.23*	1.81	2.13	2.63	3.18*	1.83	2.01
Tot. bt.	.81	1.29	1.83	1.78	2.84	3.11	1.71	2.11

students. The inconsistencies in the achievement data indicate the program had not sufficiently stabilized to have a consistent influence upon student achievement.

Change in SBDQ Types of Students

The profile of scores for the students responses to the SBDQ was analyzed to identify different types of students. The definitions for the eight types of students were presented in Plate II. The SBDQ identifies specific types of students within the following three basic types of students: achievement oriented, social oriented and ambivalent or non-participating students. The types of students are based upon the behavior of the students in the school environment.

An analysis of the total number of different types of students in a school shows the basic classes of behaviors occurring among the students. Thus, an examination of the change in the number of different types of students before and after a program indicates the impact of the program upon the attitudes and behaviors of the students. In short, was the program effective in changing the behavioral style of the student whether the behavioral style was achievement oriented, social oriented or ambivalent towards school.

The percentage of students comprising each type of student for the experimental and control schools is presented in Table 10. The table also shows the percentage of the different types of students prior to the CBE program and at the end of the CBE program. A test of the significance of the difference between proportions was computed to indicate if the change in percentage was significant. In Table 10 the percentage difference with an asterisk indicated a significant difference for the experimental schools taking into account the percentage change which occurred in the control schools.

Table 10

Change in Percentage of
SBDQ Types of Students

	S. Ldr.	Ac. S.	Op. S.	Amb.	A. Wf.	A. Ff.	Unac. P.	Non. P.
Experimental Group (N = 1858)								
Pre	.14	.11	.07	.25	.11	.09	.07	.15
Post	.15	.11	.06	.21	.19	.08	.06	.16
Change	-.01	.00	-.01	-.04	.08	-.01	-.01	.01
Control Group (N = 2038)								
Pre	.15	.10	.07	.20	.14	.10	.06	.18
Post	.16	.10	.06	.19	.14	.07	.04	.22
Change	.01	.00	-.01	-.01	.00	-.03	.02	.04
Diff.	.02	.00	.00	.03*	.08*	.02	.03*	.03*

*Significant at .01 level

The post test shows that the experimental group had significantly more achievement oriented students at the end of the CBE program than did the control group. Moreover, the experimental group had a significant reduction in the number of ambivalent, non-participating and unaccepted students. Thus, it appears that the CBE program was effective in reducing the number of ambivalent and non-participating students and at the same time significantly increasing the number of achievement oriented students.

In summary, the change in the number of specific types of students in both the experimental and control schools was analyzed as one other way of examining the impact of the CBE program. Even though the prior analysis of the achievement of the students on the CTBS indicated that there was no significant difference between the experimental and control schools, the analysis of the SBDQ profile scores indicated that a significant increase in the number of achievement oriented students had occurred in the experimental schools. Thus, the program appeared to provide the conditions for students to become achievement oriented, but these behaviors on the part of the student had not yet had an impact upon their achievement on a standardized test.

Another important finding was that in addition to the significant increase in the number of achievement oriented students, a significant decrease occurred in the number of ambivalent and non-participating students. This finding also supports the finding that student interest in school increased significantly. Moreover, the impact upon the student's attitude and behavior, in all probability is attributed to the significant increase in the teachers employing a cooperative and individualized style of teaching.

Observations of Program Operations

Throughout the two year duration of the Competency Based Education program, observations were made of the different operating components. At this

juncture, a narrative of the salient aspects of the program is provided as input about the unique aspects of the program.

Initially, in the meetings of the CBE program director and evaluator with the teachers and administrators of participating schools, the school staff initiated penetrating junctions about the nature of the program. Specifically, they were concerned with what additional activities would be required, the relationship of the program to competency based certification, sources of information about CBE, and finally specific ways of conducting the program.

The first sessions with the school staff were conducted to provide basic information to clarify the nature of the program, and to establish working relationships with the principal and teaching staff. There were, of course, objections to the program expressed in the meetings, but for the most part, all school staffs expressed a willingness to participate in the experimental program. The degree of commitment ranged from very high in one school, average in three schools, to slight, if not adverse commitment in the case of two schools. Thus, from the start the program elicited differential commitment from the school staffs. This occurrence is not unusual when a new program is initiated that has implications for the certification of teachers. Moreover, in the case of "control" schools, the staff is involved in all the testing and paper work, but do not have the benefit of participating in the new program. Accordingly, the staff has a basis for not wanting the additional work of completing the forms.

One of the most valuable techniques which was used to overcome the anxiety caused by initiating an instructional improvement program which was inferred by the teachers as having implications related to certification was the workshops to inform them about the program. Specifically, the IOTA workshop and the IOTA Implementation workshop provided the basic knowledge about

what, indeed, was going to occur. The reactions to the workshop as well as the knowledge gained was instrumental in obtaining more commitment and higher cooperation from the school staffs. Thus, teachers had the knowledge of how to use the peer review system and the administrator consultation sessions.

During the second year, after the teachers had become familiar with the IOTA procedures, the Las Cruces CBE instruments were used instead of the IOTA instruments in the peer review process. The transition to the new instruments, although difficult for many teachers, was made successfully. In retrospect, it appears that meetings should have been conducted to orient the school staff to the Las Cruces Model instead of the rather abrupt change from one system to the other.

Another technique which was very helpful in the implementation of the program was the establishment of the CBE committees in each school. Thus, the committees allowed free exchange of information among the teachers about IOTA, the Las Cruces Model, as well as information about other approaches to CBE which had been tested in other parts of the nation. The teaching staff in one elementary school, in particular found and discussed many other approaches to instructional improvement to supplement the activities directly proposed by the CBE program. These additional approaches facilitated the goal of the CBE program: instructional improvement.

The portion of the program which received a great amount of resistance on the part of the school staff was the evaluation component. The amount of testing required was monumental. For example it can be recalled that a total 12,000 tests were administered to the students and 600 to the teachers. Although the testing was an additional burden with few exceptions the schools willingly participated and provided.

Probably, one contextual aspect of the program which had the greatest effect upon the motivation of the teaching staff was the instability of the

funding for the program. Teachers, administrators, and directors were actively participating in gaining new knowledge and applying the new techniques when it became evident that funds for the program would not be available for the third and critical year. Obviously, this had an effect upon the participants, and is reflected in the evaluative data, but there is no way to control for the influence, nor separate this effect from the evaluative data obtained.

In summary, the narrative portion of the evaluation had identified several aspects of the program based upon observation of the program as well as the analysis of comments made by the school staff during different phases of the program. To reiterate, initial resistance to the program was overcome by meetings with the school staff and the IOTA workshops. The establishment of the CBE school committees in each school assisted in the transition from using the IOTA materials to the Las Cruces CBE instruments, as well as to provide a broader base of knowledge about CBE. The evaluative testing was a burden upon the time of the participating schools, especially for the control schools, but was a necessary component to provide information about the impact of the program. Finally, the termination of the funding after the secondary year, instead of the original plan of third year funding had unmeasurable influence upon program participants. Thus, the data provided did not provide conclusive evidence about the effect of the program on student achievement. An additional year was needed, to more accurately reflect the long term effect upon student achievement. The data did show that instruction improved, and the students exhibited more achievement oriented behaviors and attitudes but a third year for the program may have shown the effect upon the achievement of the students.

CONCLUSION

A Competency Based Education (CBE) program was established in the Las Cruces Public Schools during the academic years 1974-75 and 1975-76. Title IV New Mexico State Department of Education funded the experimental program. Competency based education, a new concept to many educators in the United States, has been approached in many different ways, and with varying degrees of success. Because of the multiplicity of meanings associated with the concept, one of the major components of the LCPS CBE program was to provide specific training about CBE as well as opportunities for systematic study of the system. Thus, teacher training was a major component of the program, and committees were established in each participating school to study and to field test selected models of CBE. Technical assistance was provided to the self-assessment installation committees by consultants.

Evaluation Summary

The purpose of the evaluation component was to identify and describe the impact of the CBE program. Specifically, teacher performance, student achievement and student social behavior were selected as the major study variables. In other words, it was hypothesized that the CBE program would have an impact upon the teaching techniques and in the classroom which, in turn would subsequently influence the social behavior and achievement of students. Thus, the primary focus of the evaluation was upon teaching behaviors and student achievement was a secondary variable.

The basic design for the evaluation was a comparison of pre and post measurements of experimental schools with matched control schools. Four schools elected to participate in the experimental CBE program: one high

school, one junior high school, and two elementary schools. Thus, four other control schools were obtained with attributes similar to the experimental schools. Data was analyzed which confirmed that the schools were similar with respect to teacher age, ethnicity, education, years experience teaching, sex and student ethnicity, age, family income and sex. Thus, with the schools matched as closely as possible, inferences were made with regard to the impact of the CBE program in the experimental schools.

No adequate means, however, was available to control for new teaching techniques initiated by teachers in the control schools, nor for the motivational impetus established because the control schools were being compared with the experimental schools participating in the CBE program. Nevertheless, the design is considered one of the most sophisticated that can be employed in a "real life" setting and is one that is commonly used in a formative evaluation of a new intervention program. In spite, of the lack of laboratory control in a public school setting, the design allowed the investigators to make inferences about the impact of the program upon the performance of teachers and students.

Three measuring instruments were administered to the teachers and students the experimental and control schools at the beginning of the project and near the end, approximately two years later. Two of the instruments the Student Behavior Description Questionnaire (SBDQ) and the California Test of Basic Skills (CTBS) were administered to the students. The Philosophy of Teaching Inventory (PTI) was completed by the teachers. The SBDQ was used to measure changes in the social behavior of students in four different contexts: family, friends, teachers and school activities. The CTBS was selected to measure student achievement in ten areas of language and mathematical ability. The PTI measures teachers Identification with teaching and specific

teaching competencies associated with either an Operative style of teaching or a Cooperative teaching style.

The results of the statistical analysis to identify if significant changes occurred in the experimental schools compared with the control schools were discussed separately. Specifically, the results were analyzed with respect to the impact of the program upon 1) teaching behaviors, 2) student social behavior, 3) student achievement, and 4) types of students. These four areas comprise the domains measured by the instruments.

Teaching Behaviors. The results indicated that significant changes occurred in the instructional competencies teachers employed in the classroom. Specifically, there was a significant increase in the frequency of Cooperative teaching acts for the total sample. A Cooperative teaching style is characterized by the teacher employing an individualized teaching approach in which many of the learning activities are student initiated. The teacher for example, uses the following competencies, "students assist the teacher in planning lessons", "students are encouraged to work together", and "the teacher acts as an advisor".

When the PTI scores were analyzed by elementary and secondary schools, it was found that only the elementary school teachers gained a significant change in Cooperative style. In addition, the elementary school teachers had a significantly higher Identification with teaching at the end of the CBE program. Conversely, secondary teachers had a significantly lower Identification with teaching after completing the CBE program. The significant decrease in Identification with teaching may indicate that there is a need to design a CBE program to teach competencies specific to subject matter areas. Thus, the major finding with respect to teaching behavior was that a significant change occurred towards the Cooperative style of teaching. This

supported the observation that IOTA and LCPS CBE models were designed to teach instructional competencies that were more student needs-oriented. The findings indicated that the CBE program did, indeed, accomplish that objective.

The SBDQ which was administered to the students, also included a section in which the students rated the instructional behaviors of the teachers. The students indicated that during the program the teachers showed significantly more Consideration to students, and exhibited significantly less Domination behaviors. Thus, it was evident from the student ratings that the program was successful in changing teaching behaviors towards more individualized and student-oriented teaching techniques. The SBDQ results confirmed the significant change in instructional competencies found with the teacher instrument.

In summary, the CBE program was effective in changing the instructional style teachers employed in the classroom. Both the teacher instrument and the ratings of students indicated that teachers made significant gains in employing a more cooperative, individualized and student-oriented teaching style.

Student Social Behaviors. The instrument, the SBDQ, which was administered to the students had subscales measuring social relations of students with family, teachers, peers, and school activities. The portion describing the changes in the instructional behaviors of teachers was reported in the previous section. Now, the major findings of the other sections of the SBDQ will be discussed by comparing the findings for elementary and secondary students.

Elementary students reported significantly higher Interest in school after participating in the CBE program. On the other hand Interest in school

remained the same for secondary school students. There was no change for both groups in the frequency of participation in Extra-curricular activities nor in the students development of Independence. Neither of these two were expected to change as a result of the CBE program.

Social relations occurring in classrooms among the students significantly decreased in both the elementary and secondary schools. In part, this was interpreted to indicate that the students were engaging in academic pursuits in the classroom rather than friendship relations. For example, the secondary students indicated a significant increase in friendly relationships outside scheduled school time.

Curiously, both the elementary and secondary students reported a decrease in the academic behavior, e.g., doing homework, studying, etc., that they observed their friends doing. One interpretation of this occurrence is the possibility that they were learning more from the teacher in the classroom, and accordingly less time was spent studying outside the classroom. The CBE program also influenced the social relations of the students with their parents differently for the elementary and secondary students. Specifically, the parents of elementary students participated less with their children with regard to school activities. This occurrence may have been due to the elementary students learning more in the classroom, and asking their parents to help them with their school work less frequently.

Moreover, there was a significant decrease in parental emphasis for the student to study and do homework. On the other hand, the secondary students reported a significant increase in friendship activities with their parents as well as greater emphasis from their parents for them to achieve in school. Apparently, the stress parents of the secondary students were placing upon their students may have been in part due to the need for their children to do

their homework and study more. The below expected achievement gain of secondary students supports this interpretation.

In brief, in the context of the parents social relationships with their children during the CBE program, it appeared that elementary and secondary students interacted differently. Parents of elementary students placed less emphasis upon their students to achieve in school and do their homework, probably because the elementary students were doing their school work. However, the parents of secondary students emphasized doing homework and studying because their children were not engaging in academic activities at home.

Student Achievement. The CTBS was administered to assess the achievement of students during the CBE program. Except for some differences in subscale scores the experimental junior high school and the two elementary schools did not, on the whole, differ significantly in achievement from their matched control schools. The control high school students, however, gained significantly more on the CTBS than the experimental high school. Thus, the students in the experimental high school did not achieve at a rate expected during the period or even as much as the control school. Apparently, the CBE program or other unknown factors influenced the achievement of the students in the experimental high school.

In short, when the combined achievement gain for students in the experimental schools is compared with those in the control schools there was no significant difference; both the experimental and control school students achieved at the same rate. One reason to account for this, may be related to the fact that the post achievement measure was administered too early in the CBE program; sufficient time had not elapsed for the new teaching techniques that teachers were learning to have an impact upon the achievement of the students.

Student Types. An analysis of the number of specific types of students before and after the CBE program was conducted. The SBDQ identifies eight specific types of students which in general comprise the three basic categories: achievement oriented, social oriented, and ambivalent. The results of the analysis indicated that in the schools participating in the CBE program there was a significant increase in the number of achievement oriented students. Concomitantly, there was a significant decrease in the number of ambivalent and non-participating students. Thus, the CBE program appeared to have been associated with changing the behavior and attitudes of the students toward being more achievement oriented. Moreover, the CBE program appeared to significantly reduce the number of students who were ambivalent towards school.

Summary of Findings. The evaluation study results indicated that the CBE program had an impact upon teaching techniques, the social relations occurring among students and the achievement oriented behaviors of students, but not upon student achievement. The lack of impact upon student achievement was in all probability due to the fact the post achievement measure was administered prematurely, and the achievement oriented behaviors of the students had not been occurring long enough to have an impact upon the scores on a standardized achievement test. Specifically, the following are the major findings of the evaluation study of the Las Cruces Competency Based Education program.

1. The Las Cruces Competency Based Education model was developed and published in a separate report.

2. A procedure for implementing a Competency Based Education model was developed and is included in this report.

3. At the end of the CBE program the teachers were significantly more considerate and less dominate towards students. In other words the teachers were employing a more cooperative and individualized teaching approach.

4. At the end of the CBE program elementary school teachers identified more with teaching; secondary teachers identified less with teaching.

5. Elementary school students were significantly more interested in school, and there was no change in the interest level of secondary students.

6. Elementary school students reported less need for parents to help them with their homework.

7. Parents of secondary students increased the emphasis upon their students to study and do their homework.

8. There was no difference in student achievement for the experimental and control schools.

9. There was a significant increase in the number of achievement oriented students in the experimental schools.

10. There was a significant decrease in the number of ambivalent and non-participating students in the experimental schools.

In summary, the findings show that the CBE program was effective to change the behavior of teachers toward a more cooperative and student oriented teaching style. In addition, the CBE program was effective to change the behaviors of the students; there were significantly more achievement oriented students and significantly fewer ambivalent students at the end of the program. There was no difference between the experimental and control schools with regard to student achievement on a nationally standardized test.

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APPENDIX A

SIDQ DESCRIPTION

The Image of a School

Don B. Croft

Each person has a unique way of viewing the operations of a school, and it is helpful to a school staff if information is available for describing how other groups, in general, perceive the school. Of particular interest is the image that parents, students, teachers and administrators have of the school.

The School Image Description Questionnaire (SIDQ) was developed to identify the way a school is viewed by groups associated with the school and measures the following aspects of the social organization of a school.

1. Goal priorities for the school
2. The behavior of students, parents, teachers and the principal
3. Preferences for innovative educational programs

Four separate forms of the SIDQ were developed to measure the image that parents, teachers, students and administrators have of the school. In addition, a Spanish language version is available for Spanish speaking parents.

The SIDQ provides an objective and systematic overview of school operations associated with learning, teaching and school leadership. In addition to a concise and accurate description of the basic operations of the school, the SIDQ includes an assessment of goal priorities for the school. Thus, a principal may determine if the activities of the persons in the school are in accord with the goals of the school. Moreover, comparisons can be made between the principals image and other groups viewing school operations.

Within the three basic domains measured by the SIDQ, specific attributes of a school have been identified. In other words, the SIDQ is comprised of 19 separate subscales which measure the three basic domains. The subscales measured by the SIDQ are defined in Plate I. In addition, teachers and administrators indicate their preferences for 25 widely disseminated innovative educational programs.

The SIDQ was developed by using the technique of principle components factor analysis and varimax rotation. Factor analysis as it is commonly called, is a statistical technique which identifies the basic concepts measured by an instrument as well as the items which are the "best" measures of the concepts. The item clusters identified by the factor analysis are the subscales for the instrument. Factor analysis helps select the items for the final form of the instrument which meet standard semantic and statistical criteria. Thus, a concise instrument is developed which has high internal validity.

The SIDQ has been administered to approximately 15,000 persons in different regions of the United States. The norms for standardizing the SIDQ at the elementary, junior high, and high school levels include samples from Texas, Kansas, New Mexico, Florida, South Carolina, Nebraska, and Washington D.C.

The internal consistency reliability coefficients for the SIDQ subscales were obtained by computing the average communality of the items comprising each subscale. Reliability coefficients obtained in this manner are lower bound estimates of reliability. The reliability coefficients which were obtained for the SIDQ subscales ranged between .45 and .80, and the overall reliability for the scale was .65. Thus, the SIDQ has moderately high internal consistency reliability.

PLATE I

SIDQ SUBSCALE DEFINITIONS

GOALS OF THE SCHOOL

Career preparation refers to a goal of the school to provide learning situations and school sponsored activities which prepare students for college, a trade school or a job. The definition includes learning experiences which provide a knowledge base usable in an occupation.

Socialization refers to a goal of the school to provide activities which develop the social skills, psychomotor abilities, and the emotional maturity of students.

Citizenship refers to a goal of the school to teach students the attributes of good citizenship.

STUDENT PERFORMANCE

Achievement motivation refers to a student's interest in academic achievement and describes the ability to study, obtain good grades, and enjoy academic activities. It indicates that the student obtains satisfaction from school achievement.

Further education refers to an interest in obtaining additional education in a school.

School interest refers to a student's interest and desire to continue school. It describes the ability of a student to stay out of trouble, accept school regulations, and obtain credit for his ability to perform in school.

School spirit refers to the student's participation in school extracurricular activities and that he helps plan school activities, joins service clubs, is a member of activity committees, and enjoys student-group events.

Student friendliness refers to the ability to enjoy friendly relationships with others, confide in and discuss problems with friends, and be at ease with other individuals.

Trade school refers to the interest of a student to attend a trade, vocation or technical school.

PLATE I (continued)

TEACHER PHILOSOPHY

Operative philosophy refers to emphasis upon directing and controlling teaching in order to stress the learning of subject matter. The teacher also sets goals and objectives and insures they are met and acts in the role of a disseminator of knowledge and factual information.

Cooperative philosophy refers to the ability to act as the leader of a student group engaging in learning activities. It also describes skills in establishing close interpersonal relations with the group and the ability to coordinate and structure the task activities of group members. The teacher acts in the role of a team leader in the learning situation.

Discipline refers to the enforcement of school regulations, requiring students to study intensely and punishing violators of school rules.

Teacher friendliness refers to the ability to enjoy friendly relationships with others, confide in and discuss problems with friends, and be at ease with other individuals.

PARENT PARTICIPATION

Parental input refers to obtaining information from parents about school policies and procedures. It indicates that parents make recommendations about the classes taught, react to school policies, assist in instructional processes and interact with the school.

Parents are informed refers to "how well" parents perceive they are informed about school activities and policies. Parents are informed by personal consultation, newsletters, meetings, or other means.

Academic orientation refers to the emphasis parents place upon education, and desire for the student to achieve in school. It describes how parents stress school attendance, good grades, and insure the student does his homework.

School participation refers to behavior by the parents to participate and be included in the school activities of the student. It also indicates that appropriate help is given from the parents to aid the educational attainment of the student.

ORGANIZATIONAL LEADERSHIP

Directiveness refers to the principal's assigning tasks, scheduling work, and monitoring the activities of school staff. It indicates directing and controlling staff members to insure goals of the school are accomplished.

Openness describes the overall image of the school and refers to a school in which the teachers and the administration have high morale as a result of task accomplishment and also obtain satisfaction from social relations with others in the school. It also describes a school that is open to innovation and to new educational programs.

Instructions are available for conducting study with the SIDQ. The instructions include procedures for selecting random samples, distributing, and organizing the instruments as well as obtaining scoring services. In addition, information is available for interpreting the computerized scoring output for the SIDQ.

The SIDQ was designed to provide an overall description of many salient facets of school operations. If problem areas are identified then additional study can be made of those specific areas. Moreover, the instrument was designed to provide information for the principal and teachers to "act upon". In other words, the results suggest alternative ways to the school staff for improving school operations. The SIDQ provides input to the decision-making process in the following ways:

1. Allows comparison of the principals perception of the school with those of parents, teachers, and students.

2. Provides a way of assessing if the performance of students, parents, and teachers are congruent with the goals of the school.

3. Identifies the goals that parents, teachers, students, and administraters perceive important for the school.

4. Comparisons can be made of the school with other schools.

5. Identifies the attributes of the school which contribute to the openness of the school.

6. Identify new educational programs which have high priority as perceived by the teachers and administration.

In summary, the SIDQ is an easily administered instrument for obtaining the "image" that parents, teachers, students and the principal have for a school. The SIDQ provides an overview of the basic operations of a school, and identifies the strengths of a school as well as attributes which may

need additional examination. The SIDQ is not a prescription for a principal, but instead is an instrumentality for obtaining accurate and systematic information which can be used in conjunction with other available information in the process of improving the operations of the school.

SIDQ Forms and scoring information may be obtained from:

Dr. Don B. Croft
Educational Research Center
New Mexico State University
Las Cruces, N.M. 88003

APPENDIX B

IOTA DESCRIPTION

IOTA Assessment of Teaching Competence
for Improvement of Instruction

The Instrument for the Observation of Teaching Activities (IOTA) is based upon a broadly accepted definition of teaching. As described in the IOTA program report, teaching is defined by selected teacher behaviors when performing the role of the teacher in society.[1] The role defines the professional tasks of the teacher in democratic society, and the following six major areas of responsibility are identified with the teaching role: 1) Director of Learning, 2) Counselor and Advisor, 3) Mediator of the Culture, 4) Link with the Community, 5) Member of the Staff, and 6) Member of the Teaching Profession. Approximately 100 behavior activities have been identified as associated with the six areas of teacher responsibility. Thus, the definition of teaching includes not only the teacher's performance in the classroom but also includes activities and responsibilities outside the classroom.

IOTA is based upon the criterion, the role of the teacher in society, and the 100 behavioral activities of the criterion have been classified into 27 "scales". There are two types of Instruments: Observation and Interview. Data is obtained for the Observation instrument by observing teachers performing in the classroom. There are 14 scales to describe the classroom teaching of the teacher. On the other hand a structured interview is used to obtain data for the Interview instrument. Thirteen scales comprise the

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[1]Carpenter, James O. The IOTA Program National data Program P.O. Box 163, Tempe, Arizona 85281.

PLATE I

IOTA INSTRUMENT SCALE TITLES

OBSERVATION SCALES

1. Learning Centers
2. Variety in Activities
3. Use of Materials for Instruction
4. Classroom Control
5. Learning Difficulties
6. Individualization of Instruction
7. Development and Implementation of Classroom Goals
8. Opportunity for Participation
9. Teacher Reaction to Student Response
10. Creative Expression
11. Development of Student Initiative
12. Social Climate
13. Subject Matter Preparation
14. Current Application of Subject Matter

INTERVIEW SCALES

15. Peer Relationships
16. Participation in School Staff Activities
17. Articulation of Classroom Program to Total School Curriculum
18. Parent Participation in School Activities
19. Utilization of Community Resources
20. Personal Professional Responsibility
21. Professional Self-Evaluation
22. Teacher in the Community
23. Skill in Enhancing Multi-Cultural Relationships
24. Evaluation of Individual Student Progress by the Teacher
25. Development of Student Self-Assessment
26. Work with Specialized Services
27. Assists Students in Exploring Vocational Opportunities

Interview instrument. Moreover, the majority of the six areas of responsibility identified with the teaching role are measured by both the Observation and the Interview instruments.

Each scale describes five different behavioral activities, or levels of competence, associated with that scale. Level five is the highest level of competence, and level one is defined as the lowest level of competence. Data from the classroom observation instrument and the structured interview provide the basis for trained observant and interviewers to assess the teaching competence of a teacher.

The purpose of the instruments is to guide the observer in collecting specific objective information upon which a valid and reliable assessment of teaching competence can be made. The inter-rates reliability coefficients for trained raters using IOTA is .87. The subscale titles describing the 27 aspects of the teaching role measured by IOTA is presented in Plate I.

School districts in the following nine states have implemented the IOTA program in public schools: Arizona, Indiana, Kansas, Missouri, Nebraska, New York, Washington, Wyoming and New Mexico. In addition, the states of Arizona and New Mexico have implemented IOTAH, a version for institutions of higher education, in colleges and universities. Currently, six research reports are available which relate IOTA to various other criteria, for example student achievement, teacher self-study and motiviation, and instructional improvement. Copies of the reports are available at the IOTA office in Tempe, Arizona.

APPENDIX C

STUDENT BEHAVIOR DESCRIPTION QUESTIONNAIRE FORMS

STUDENT BEHAVIOR DESCRIPTION QUESTIONNAIRE

(Elementary School Form)

The questions contained in this inventory describe a wide variety of situations that occur in school and at home. The purpose of the questionnaire is to secure a description of things that happen to students, and how they feel about their friends, teachers, school work and home life.

Please read each question carefully, then indicate how it applies to you by circling the appropriate number just to the right of each question.

Please answer all items truthfully so we can obtain an accurate description of things influencing a student's attitude toward school. To set your mind at ease, your teachers will not see your responses to the questionnaire. The results, of course, will be held in the strictest confidence.

The following example shows how to mark the questions in this inventory. The scale that is used to rate the items is written on each page.

1. Not very often
2. Sometimes
3. Often
4. Most of the time

1. I do my homework by myself. 1 2 (3) 4

In this example, the student circled number 3 to indicate that he "often" did his homework by himself. Of course, any other alternative could be selected depending upon "how often" the student did what the question described. Please answer every item as carefully as possible. You may, of course, omit answering any item which is objectionable to you.

The items in this questionnaire have been numbered to facilitate keypunching. Therefore, the items are not numbered in sequence.

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Educational Research Services
2010 Corley Dr.
Las Cruces, New Mexico 88001

BIOGRAPHICAL INFORMATION

C1-3 Student Name _____

C4-6 School _____

C7-9 Teacher _____

10. Sex (Circle the appropriate number)

1. Boy
2. Girl

11. Present Grade

1. Fourth
2. Fifth
3. Sixth

12. Age (Years at last birthday)

1. 8 or younger
2. 9 years
3. 10 years
4. 11 years
5. 12 years
6. 13 or older

13. My family's cultural background is principally

1. Indian-American
2. Anglo-American
3. Spanish-American
4. Negro-American
5. Oriental-American
6. Other: _____

14. My family's income is approximately

0. Don't know
1. Very little
2. About average
3. Very much

C15-1

65

1. Not very often
2. Sometimes
3. Often
4. Most of the time

16.	I invite school friends to my house.	1 2 3 4
17.	Other boys and girls at this school bother me.	1 2 3 4
18.	My friends want to go on for more education after high school.	1 2 3 4
19.	There is a lot of laughter when our class is together.	1 2 3 4
20.	Other boys and girls make fun of me.	1 2 3 4
21.	My friends say they want to go to college.	1 2 3 4
22.	Other boys and girls invite me to visit them at their houses.	1 2 3 4
23.	The way other boys and girls act bothers me.	1 2 3 4
24.	My friends study a lot.	1 2 3 4
25.	Other boys and girls get to know my mother, father, sisters, and brothers.	1 2 3 4
26.	Most of my friends get good grades.	1 2 3 4
27.	I like being a part of my group of friends.	1 2 3 4
28.	My friends don't like the teachers at this school.	1 2 3 4
29.	Most of my friends take part in school things.	1 2 3 4
30.	I laugh a lot when I'm with my school friends.	1 2 3 4
31.	Most of my friends do not like school.	1 2 3 4
32.	My friends do their homework every day.	1 2 3 4
33.	I have fun playing and working with other boys and girls at this school.	1 2 3 4
34.	Boys and girls at this school are "stuck-up".	1 2 3 4
35.	My school friends show that they like their school.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

36.	I talk over my problems with my friends.	1 2 3 4
37.	I eat lunch by myself.	1 2 3 4
38.	It is easy to make friends at this school.	1 2 3 4
39.	Most of my friends like their friends.	1 2 3 4
40.	My parents want me to get a good education.	1 2 3 4
41.	My parents make sure that I study hard.	1 2 3 4
42.	My parents make me obey.	1 2 3 4
43.	My parents tell me what is good for me.	1 2 3 4
44.	My parents want me to have many fun things to do.	1 2 3 4
45.	My parents do a lot for me.	1 2 3 4
46.	I enjoy eating with my family.	1 2 3 4
47.	My parents want me to stay home more often.	1 2 3 4
48.	My parents want me to get more schooling.	1 2 3 4
49.	My parents see that I do my homework.	1 2 3 4
50.	My parents do all they can to help me.	1 2 3 4
51.	My parents help me with my homework.	1 2 3 4
52.	My parents get mad if I'm late for school.	1 2 3 4
53.	My parents almost always like my friends..	1 2 3 4
54.	My parents help pick the classes I take. in school.	1 2 3 4
55.	My parents make a big thing about going to school.	1 2 3 4
56.	My parents like going to school things with me.	1 2 3 4

99

1. Not very often
2. Sometimes
3. Often
4. Most of the time

57.	I get along very well with my parents.	1 2 3 4
58.	My parents want me to get good grades at school.	1 2 3 4
59.	My parents are "fair" with me.	1 2 3 4
60.	My parents like to come to school meetings.	1 2 3 4
61.	I like talking with my teachers.	1 2 3 4
62.	Teachers make fun of what the boys and girls say.	1 2 3 4
63.	Teachers are easy to get along with.	1 2 3 4
64.	Teachers are very good friends of mine.	1 2 3 4
65.	Teachers get mad at boys and girls.	1 2 3 4
66.	Teachers are nice to the boys and girls.	1 2 3 4
67.	Teachers know a lot.	1 2 3 4
68.	Teachers are too busy.	1 2 3 4
69.	Teachers do special things for boys and girls.	1 2 3 4
70.	Teachers listen carefully to the kids' questions.	1 2 3 4
71.	Teachers make fun of the boys and girls when they make mistakes.	1 2 3 4
72.	Teachers help the boys and girls think clearly about class work.	1 2 3 4
73.	Teachers don't let boys and girls finish what they are saying.	1 2 3 4
74.	Teachers help the boys and girls with any problems they may have.	1 2 3 4
75.	Teachers know what they are talking about.	1 2 3 4
76.	Teachers care about the kids.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

77.	Teachers are kind and cheerful	1 2 3 4
78.	Teachers try very hard to teach boys and girls something.	1 2 3 4
79.	Teachers try to tell boys and girls what to do.	1 2 3 4
80.	Teachers tell boys and girls about new thing they find.	1 2 3 4

C15-2

16.	Teachers speak in a way boys and girls can't talk back to them.	1 2 3 4
17.	Teachers tell funny stories to boys and girls in class.	1 2 3 4
18.	Teachers tell why they question students.	1 2 3 4
19.	I would like to quit school.	1 2 3 4
20.	I take part in school meetings.	1 2 3 4
21.	I would rather earn money than go to school.	1 2 3 4
22.	I help in school meetings.	1 2 3 4
23.	I have as much money as I need for class.	1 2 3 4
24.	I don't like school.	1 2 3 4
25.	I help plan school things.	1 2 3 4
26.	I am pretty sure of what I want to be when I grow up.	1 2 3 4
27.	School is a waste of time for me.	1 2 3 4
28.	I take part in things after school.	1 2 3 4
29.	I feel I can do things for myself.	1 2 3 4
30.	I earn money in the summer.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

31.	School rules are too hard to follow.	1 2 3 4
32.	I have been chosen to be a class officer.	1 2 3 4
33.	I have enough money for school things.	1 2 3 4
34.	It's better to have a job that pays a lot of money than to go to school.	1 2 3 4
35.	I take part in school plays and meetings.	1 2 3 4
36.	No one believes that I can do something.	1 2 3 4
37.	I like to join the school clubs.	1 2 3 4
38.	I like school very much.	1 2 3 4
39.	I do small jobs for the teachers.	1 2 3 4
40.	I want to go to a school that teaches me a job.	1 2 3 4

STUDENT BEHAVIOR DESCRIPTION QUESTIONNAIRE
(Junior High School Form)

The questions contained in this inventory describe a wide variety of situations that occur in school and at home. The purpose of the questionnaire is to secure a description of things that happen to students, and how they feel about their friends, teachers, school work and home life.

Please read each question carefully, then indicate how it applies to you by circling the appropriate number just to the right of each question.

Please answer all items truthfully so we can obtain an accurate description of things influencing a student's attitude toward school. To set your mind at ease, your teachers will not see your responses to the questionnaire. The results, of course, will be held in the strictest confidence.

The following example shows how to mark the questions in this inventory. The scale that is used to rate the items is written on each page.

1. Not very often
2. Sometimes
3. Often
4. Most of the time

1. I do my homework by myself. 1 2 (3) 4

In this example, the student circled number 3 to indicate that he "often" did his homework by himself. Of course, any other alternative could be selected depending upon "how often" the student did what the question described. Please answer every item as carefully as possible. You may, of course, omit answering any item which is objectionable to you.

The items in this questionnaire have been numbered to facilitate keypunching. Therefore, the items are not numbered in sequence.

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BIOGRAPHICAL INFORMATION

C1-3 Student Name _____

C4-6 School _____

C7-9 Teacher _____

10. Sex (Circle the appropriate number)

1. Boy
2. Girl

11. Present Grade

1. Seventh
2. Eighth
3. Ninth

12. Age (Years at last birthday)

1. 8 or younger
2. 9 years
3. 10 years
4. 11 years
5. 12 years
6. 13 or older

13. My family's cultural background is principally

1. Indian-American
2. Anglo-American
3. Spanish-American
4. Negro-American
5. Oriental-American
6. Other: _____

14. My family's income is approximately

0. Don't know
1. Very little
2. About average
3. Very much

C15-1

1. Not very often
2. Sometimes
3. Often
4. Most of the time

16.	I invite school friends to my house.	1 2 3 4
17.	Other boys and girls at this school bother me.	1 2 3 4
18.	My friends want to go on for more education after high school.	1 2 3 4
19.	There is a lot of laughter when our class is together.	1 2 3 4
20.	Other boys and girls make fun of me.	1 2 3 4
21.	My friends say they want to go to college.	1 2 3 4
22.	Other boys and girls invite me to visit them at their houses.	1 2 3 4
23.	The way other boys and girls act bothers me.	1 2 3 4
24.	My friends study a lot.	1 2 3 4
25.	Other boys and girls get to know my mother, father, sisters, and brothers.	1 2 3 4
26.	Most of my friends get good grades.	1 2 3 4
27.	I like being a part of my group of friends.	1 2 3 4
28.	My friends don't like the teachers at this school.	1 2 3 4
29.	Most of my friends take part in school things.	1 2 3 4
30.	I laugh a lot when I'm with my school friends.	1 2 3 4
31.	Most of my friends do not like school.	1 2 3 4
32.	My friends do their homework every day.	1 2 3 4
33.	I have fun playing and working with other boys and girls at this school.	1 2 3 4
34.	Boys and girls at this school are "stuck-up".	1 2 3 4
35.	My school friends show that they like their school.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

36.	I talk over my problems with my friends.	1 2 3 4
37.	I eat lunch by myself.	1 2 3 4
38.	It is easy to make friends at this school.	1 2 3 4
39.	Most of my friends like their friends.	1 2 3 4
40.	My parents want me to get a good education.	1 2 3 4
41.	My parents make sure that I study hard.	1 2 3 4
42.	My parents make me obey.	1 2 3 4
43.	My parents tell me what is good for me.	1 2 3 4
44.	My parents want me to have many fun things to do.	1 2 3 4
45.	My parents do a lot for me.	1 2 3 4
46.	I enjoy eating with my family.	1 2 3 4
47.	My parents want me to stay home more often.	1 2 3 4
48.	My parents want me to get more schooling.	1 2 3 4
49.	My parents see that I do my homework.	1 2 3 4
50.	My parents do all they can to help me.	1 2 3 4
51.	My parents help me with my homework.	1 2 3 4
52.	My parents get mad if I'm late for school.	1 2 3 4
53.	My parents almost always like my friends..	1 2 3 4
54.	My parents help pick the classes I take. in school.	1 2 3 4
55.	My parents make a big thing about going to school.	1 2 3 4
56.	My parents like going to school things with me.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

57.	I get along very well with my parents.	1 2 3 4
58.	My parents want me to get good grades at school.	1 2 3 4
59.	My parents are "fair" with me.	1 2 3 4
60.	My parents like to come to school meetings.	1 2 3 4
61.	I like talking with my teachers.	1 2 3 4
62.	Teachers make fun of what the boys and girls say.	1 2 3 4
63.	Teachers are easy to get along with.	1 2 3 4
64.	Teachers are very good friends of mine.	1 2 3 4
65.	Teachers get mad at boys and girls.	1 2 3 4
66.	Teachers are nice to the boys and girls.	1 2 3 4
67.	Teachers know a lot.	1 2 3 4
68.	Teachers are too busy.	1 2 3 4
69.	Teachers do special things for boys and girls.	1 2 3 4
70.	Teachers listen carefully to the kids' questions.	1 2 3 4
71.	Teachers make fun of the boys and girls when they make mistakes.	1 2 3 4
72.	Teachers help the boys and girls think clearly about class work.	1 2 3 4
73.	Teachers don't let boys and girls finish what they are saying.	1 2 3 4
74.	Teachers help the boys and girls with any problems they may have.	1 2 3 4
75.	Teachers know what they are talking about.	1 2 3 4
76.	Teachers care about the kids.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

77.	Teachers are kind and cheerful	1 2 3 4
78.	Teachers try very hard to teach boys and girls something.	1 2 3 4
79.	Teachers try to tell boys and girls what to do.	1 2 3 4
80.	Teachers tell boys and girls about new thing they find.	1 2 3 4

C15-2

16.	Teachers speak in a way boys and girls can't talk back to them.	1 2 3 4
17.	Teachers tell funny stories to boys and girls in class.	1 2 3 4
18.	Teachers tell why they question students.	1 2 3 4
19.	I would like to quit school.	1 2 3 4
20.	I take part in school meetings.	1 2 3 4
21.	I would rather earn money than go to school.	1 2 3 4
22.	I help in school meetings.	1 2 3 4
23.	I have as much money as I need for class.	1 2 3 4
24.	I don't like school.	1 2 3 4
25.	I help plan school things.	1 2 3 4
26.	I am pretty sure of what I want to be when I grow up.	1 2 3 4
27.	School is a waste of time for me.	1 2 3 4
28.	I take part in things after school.	1 2 3 4
29.	I feel I can do things for myself.	1 2 3 4
30.	I earn money in the summer.	1 2 3 4

1. Not very often
2. Sometimes
3. Often
4. Most of the time

31.	School rules are too hard to follow.	1 2 3 4
32.	I have been chosen to be a class officer.	1 2 3 4
33.	I have enough money for school things.	1 2 3 4
34.	It's better to have a job that pays a lot of money than to go to school.	1 2 3 4
35.	I take part in school plays and meetings.	1 2 3 4
36.	No one believes that I can do something.	1 2 3 4
37.	I like to join the school clubs.	1 2 3 4
38.	I like school very much.	1 2 3 4
39.	I do small jobs for the teachers.	1 2 3 4
40.	I want to go to a school that teaches me a job.	1 2 3 4

STUDENT BEHAVIOR DESCRIPTION QUESTIONNAIRE
(High School Form)

The questions contained in this inventory describe a wide variety of situations that occur in school and at home. The purpose of the questionnaire is to secure a description of things that happen to students, and how they feel about their friends, teachers, school work and home life.

Please read each question carefully, then, indicate how it applies to you by circling the appropriate number just to the right of each question.

Please answer all items truthfully so we can obtain an accurate description of things influencing a student's attitude toward school. To set your mind at ease, your teachers will not see your responses to the questionnaire. The results, of course, will be held in the strictest confidence.

The following example shows how to mark the questions in this inventory. The scale that is used to rate the items is written on each page.

1. Rarely
2. Sometimes
3. Often
4. Frequently

1. I do my homework by myself. 1 2 (3) 4

In this example, the student circled number 3 to indicate that he "often" did his homework by himself. Of course, any other alternative could be selected depending upon "how often" the student did what the question described. Please answer every item as carefully as possible. You may omit answering any item which is objectionable to you.

The items in this questionnaire have been numbered to facilitate keypunching. Therefore, the items are not numbered in sequence.

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Las Cruces, New Mexico 88001

BIOGRAPHICAL INFORMATION

C1-3 Student Name _____

C4-6 School _____

C7-9 Teacher _____

10. Sex (Circle the appropriate number)

1. Male
2. Female

11. Present Grade

1. Seventh
2. Eighth
3. Ninth
4. Tenth
5. Eleventh
6. Twelfth

12. Age (Years at last birthday)

1. 11 years
2. 12 years
3. 13 years
4. 14 years
5. 15 years
6. 16 years
7. 17 years
8. 18 years
9. 19 years

13. My family's cultural background is principally

1. Indian-American
2. Anglo-American
3. Spanish-American
4. Negro-American
5. Oriental-American
6. Other: _____

14. My family's income is approximately

0. I don't know
1. Less than $1,499 a year
2. Between $1,550 and $3,499
3. Between $3,500 and $4,999
4. Between $5,000 and $6,999
5. Between $7,000 and $10,000
6. Above $10,000

C15-1

1. Rarely
2. Sometimes
3. Often
4. Frequently

16.	I invite school chums to my home.	1 2 3 4
17.	Other students at this school annoy me.	1 2 3 4
18.	My friends want to continue their education after high school.	1 2 3 4
19.	There is considerable laughter when our group is together.	1 2 3 4
20.	Other students make fun of me.	1 2 3 4
21.	My friends say they want to go to college.	1 2 3 4
22.	Other students invite me to visit them at their homes.	1 2 3 4
23.	The way other students act is annoying.	1 2 3 4
24.	My friends study a lot.	1 2 3 4
25.	Other students get to know members of my family.	1 2 3 4
26.	Most of my friends would like to quit school.	1 2 3 4
27.	Most of my friends get good grades.	1 2 3 4
28.	I enjoy being a member of my group of friends.	1 2 3 4
29.	My friends don't like the teachers at this school.	1 2 3 4
30.	Most of my friends participate in school activities.	1 2 3 4
31.	I laugh a lot when I'm with my school friends.	1 2 3 4
32.	Most of my friends are dissatisfied with school.	1 2 3 4
33.	My friends do their homework regularly.	1 2 3 4
34.	I have fun socializing with other students at this school.	1 2 3 4
35.	Students at this school are snobbish.	1 2 3 4
36.	My school friends show lots of school spirit.	1 2 3 4

1. Rarely
2. Sometimes
3. Often
4. Frequently

37.	I talk over personal problems with my friends.	1 2 3 4
38.	I eat lunch by myself.	1 2 3 4
39.	Some of my friends are class officers.	1 2 3 4
40.	It is easy to make friends at this school.	1 2 3 4
41.	You have to dress "just so" at this school.	1 2 3 4
42.	My friends talk about school a lot.	1 2 3 4
43.	Most of my friends accept each others faults.	1 2 3 4
44.	Many of my friends are younger than I am.	1 2 3 4
45.	My friends and I study together.	1 2 3 4
46.	My parents want me to get a good education.	1 2 3 4
47.	My parents insure that I study hard.	1 2 3 4
48.	My parents are strict with me.	1 2 3 4
49.	My parents usually give me good advice.	1 2 3 4
50.	My parents want me to have many hobbies.	1 2 3 4
51.	My parents treat me like a child.	1 2 3 4
52.	My parents do a lot for me.	1 2 3 4
53.	I talk over problems with my parents.	1 2 3 4
54.	My parents get angry if I want to miss school.	1 2 3 4
55.	I enjoy having dinner with my family.	1 2 3 4
56.	My parents explain their reasons for criticism.	1 2 3 4
57.	My parents want me to stay home more often.	1 2 3 4
58.	My parents want me to continue school.	1 2 3 4
59.	My parents see that I do my school work.	1 2 3 4

1. Rarely
2. Sometimes
3. Often
4. Frequently

0.	My parents are angry when I get poor grades.	1 2 3 4
1.	My parents go out of their way to help me.	1 2 3 4
2.	My parents help me with my homework.	1 2 3 4
3.	My parents get angry if I'm late for school.	1 2 3 4
4.	My parents usually like my friends.	1 2 3 4
5.	My parents help select the classes I take at school.	1 2 3 4
6.	My parents overemphasize the importance of school.	1 2 3 4
7.	I don't mind helping with tasks around the house.	1 2 3 4
8.	My parents enjoy going to school events with me.	1 2 3 4
9.	I get along very well with my parents.	1 2 3 4
0.	My parents are proud of my performance in school.	1 2 3 4
1.	My parents praise my school work.	1 2 3 4
2.	My parents want me to get top grades in school.	1 2 3 4
3.	My parents are "fair" with me.	1 2 3 4
4.	My parents enjoy coming to school meetings.	1 2 3 4
5.	My parents would object if I quit school.	1 2 3 4
6.	I enjoy talking with my teachers.	1 2 3 4
7.	Teachers give students a chance to ask questions.	1 2 3 4
8.	Teachers criticize the students' point of view.	1 2 3 4
9.	Teachers are easy to get along with.	1 2 3 4
80.	Teachers direct class talk towards a discussion of the facts.	1 2 3 4

1. Rarely
2. Sometimes
3. Often
4. Frequently

C15-2

16.	Teachers talk "down" to students.	1 2 3 4
17.	Teachers are personal friends of mine.	1 2 3 4
18.	Teachers encourage students to express their own opinion.	1 2 3 4
19.	Teachers lose patience with students.	1 2 3 4
20.	Teachers are very considerate of the students.	1 2 3 4
21.	Teachers are well prepared when they teach class.	1 2 3 4
22.	Teachers act too much like "the" authority.	1 2 3 4
23.	Teachers do personal favors for students.	1 2 3 4
24.	Teachers will listen attentively to a student's questions.	1 2 3 4
25.	Teachers criticize students when they make mistakes.	1 2 3 4
26.	Teachers are courteous to students.	1 2 3 4
27.	Teachers help students clarify their thinking about class assignments.	1 2 3 4
28.	Teachers don't let students finish what they are saying.	1 2 3 4
29.	Teachers help students with their personal problems.	1 2 3 4
30.	Teachers usually present good reasons to justify their statements.	1 2 3 4
31.	Teachers are cold and impersonal in class.	1 2 3 4
32.	Teachers are pleasant and cheerful.	1 2 3 4
33.	Teachers try very hard to teach students something.	1 2 3 4
34.	Teachers try to dominate students.	1 2 3 4

1. Rarely
2. Sometimes
3. Often
4. Frequently

45.	Teachers spend extra time to help students.	1 2 3 4
46.	Teachers tell students about new ideas they run across	1 2 3 4
47.	Teachers speak in a manner not to be quesitoned.	1 2 3 4
48.	Teachers tell amusing stories to students in class.	1 2 3 4
49.	Teachers explain their reason for criticizing students.	1 2 3 4
50.	Teachers try to convince students that they are right.	1 2 3 4
51.	I would like to quit school.	1 2 3 4
52.	I participate in school activities committees.	1 2 3 4
53.	I feel that I know where I'm going in life.	1 2 3 4
54.	I would rather work than continue school.	1 2 3 4
55.	I help on dance, assembly, etc. committees.	1 2 3 4
56.	I have as much money as I need for class.	1 2 3 4
57.	I don't like school.	1 2 3 4
58.	I help plan school activities.	1 2 3 4
59.	I am fairly sure of what I want to be.	1 2 3 4
60.	Many classes are a waste of time for me.	1 2 3 4
61.	I participate in extra-curricular activities.	1 2 3 4
62.	I feel I can stand on my own two feet.	1 2 3 4
63.	I have been in trouble with the law.	1 2 3 4
64.	I enjoy participating in extra-curricular activities.	1 2 3 4
65.	I work during the summer months.	1 2 3 4

1. Rarely
2. Sometimes
3. Often
4. Frequently

56.	School regulations are too strict.	1 2 3 4
57.	I have been elected to a school office.	1 2 3 4
58.	I have enough money for school activities.	1 2 3 4
59.	It's better to have a high paying job than an all-around education.	1 2 3 4
60.	I perform at school assemblies.	1 2 3 4
61.	Students are able to take the classes they like.	1 2 3 4
62.	I am not given credit for my ability.	1 2 3 4
63.	I like to join the school service clubs.	1 2 3 4
64.	I do as well as I can in school.	1 2 3 4
65.	I am very interested in school.	1 2 3 4
66.	I do small tasks for the teachers.	1 2 3 4
67.	I work after school.	1 2 3 4
68.	I want to get good grades.	1 2 3 4
69.	I check out books from the library.	1 2 3 4
70.	I want to attend a trade school.	1 2 3 4

APPENDIX D

PHILOSOPHY OF TEACHING FORM

PHILOSOPHY OF TEACHING INVENTORY

The purpose of this questionnaire is to secure a description of the different ways that teachers perceive teaching. The items in this questionnaire describe typical viewpoints that teachers have about teaching. Please indicate to what extent you agree or disgree with each statement.

Marking Instrictions

Printed below is an example of a typical item found in the Philosophy of Teaching Inventory.

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

Teachers should encourage class participation. 1 2 (3) 4

In this example the respondent marked alternative 3 to show that she "agreed" with the attitude described by this item. Of course, any of the other alternatives could be selected, depending upon the extent to which the respondent agrees or disagrees with the statement.

Please mark your response clearly, as in the example. You may, of course, omit answering any item which is objectionable to you.

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Las Cruces, New Mexico 88001

Biographical Information

1-4 Name_____ SS#___-___-____

5-6 School_____ Center Location_____

7-8 Date_____ Education Level_____

Please circle the number to the left of the appropriate category.

9. Sex:
   1) Man
   2) Woman

10. Age:
   1) 18-19
   2) 20-29
   3) 30-39
   4) 40-49
   5) 50-59
   6) 60 or over

11. Position:
   1) student
   2) teacher
   3) certified teacher

12. Teaching specialty:
   1) pre-school
   2) elementary
   3) secondary
   4) other: specify_____

13. Education:
   1) Freshman
   2) Sophomore
   3) Junior
   4) Senior
   5) B. S. degree
   6) M. S. degree
   7) Education Specialist
   8) Doctorate

14. Student-teaching experience:
   1) none
   2) one semester
   3) two semesters
   4) three or more semesters

15. Years of experience teaching:
   1) none
   2) 1-2
   3) 3-5
   4) 6-10
   5) 11-20
   6) 25 or more

16. Ethnic background:
   1) White-American
   2) Spanish-American
   3) Black-American
   4) Indian-American
   5) Oriental-American
   6) Other: specify_____

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

17. The most effective teacher is one who has specialized in a single subject. 1 2 3 4

18. Teaching is simply assisting the natural development of the student. 1 2 3 4

19. The teacher should encourage the student to discover ideas for himself. 1 2 3 4

20. Students should work independently and the teacher act as an advisor. 1 2 3 4

21. Teachers should be subject-matter specialists. 1 2 3 4

22. A permissive classroom results in discipline problems. 1 2 3 4

23. The teacher should direct and control the learning process. 1 2 3 4

24. A teacher should have close interpersonal relationships with students. 1 2 3 4

25. Teachers should help students develop their individual abilities. 1 2 3 4

26. Teaching is a satisfying profession. 1 2 3 4

27. Teachers should interact closely with students. 1 2 3 4

28. Teachers should reinforce students often. 1 2 3 4

29. I am proud of being associated with the teaching profession. 1 2 3 4

30. Course material should be taught in sequence. 1 2 3 4

31. Simple concepts should be taught before introducing complex ones. 1 2 3 4

32. Teachers should follow the social rules specified by the community in which they teach. 1 2 3 4

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

33. Much of the subject-matter taught in school is not relevant for the students. 1 2 3 4

34. Teaching is presenting the material to the student for him to learn. 1 2 3

35. Teachers should vary the activities in the classroom often to optimize learning. 1 2 3 4

36. Students should be encouraged to work together on their homework. 1 2 3 4

37. Few unplanned activities should occur in the classroom. 1 2 3 4

38. Teaching values has little place in public schools 1 2 3 4

39. Students should assist the teacher in planning lessons. 1 2 3 4

40. Students should be allowed time to study on their own. 1 2 3 4

41. Teachers should do most of the talking in class. 1 2 3 4

42. The teacher should be a model for students to follow. 1 2 3 4

43. Classroom competition helps students to learn faster. 1 2 3 4

44. Students should be allowed to discuss any topic in class. 1 2 3 4

45. Students should not question the authority of the teacher. 1 2 3 4

46. Most of the satisfaction a teacher receives in school is from the students. 1 2 3 4

47. The main task in teaching is motivating the students. 1 2 3 4

48. The rights of the majority of the class are more important than any individual. 1 2 3 4

49. Teachers should provide an individualized curriculum for the students. 1 2 3 4

50. Teachers should teach material in an orderly and sequential manner. 1 2 3 4

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

51. Classroom instruction should be individualized for each child. 1 2 3 4

52. A student's knowledge should be measured by an achievement test. 1 2 3 4

53. Teachers should encourage students to compete for grades. 1 2 3 4

54. Students should be allowed to choose what they want to learn. 1 2 3 4

55. Basic concepts should be taught by programmed instruction machines. 1 2 3 4

56. Behavioral obejctives should be developed for each class. 1 2 3 4

57. Learning includes considerable memorization by the student. 1 2 3 4

58. Most learning activities should be initiated by the student. 1 2 3 4

59. Teachers should specify the objectives to be achieved by each student. 1 2 3 4

60. Teachers should encourage student initiative. 1 2 3 4

61. Students learn more when the teacher is friendly. 1 2 3 4

62. Teachers should set standards for the student to achieve. 1 2 3 4

63. Student competition should be encouraged by the teacher. 1 2 3 4

64. Students should be allowed to express personal opinions in class. 1 2 3 4

65. Students should set their own pace of learning. 1 2 3 4

66. Grades are necessary to measure a student's progress. 1 2 3 4

67. Teachers should select activities where each child can succeed. 1 2 3 4

68. Teachers should not force children to learn before they are ready. 1 2 3 4